NOVEMBER 10, 1958

PURCHASING

The Methods and News Magazine for Industrial Buyers

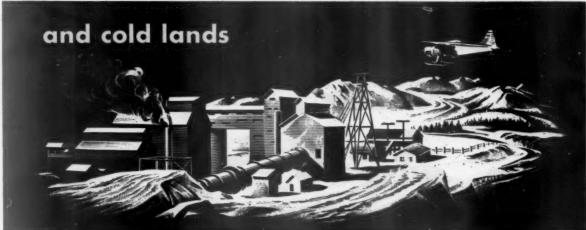


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Start on page 69

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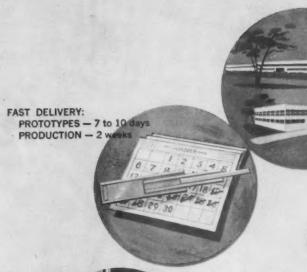
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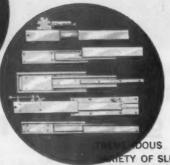
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PURCHASING

The Methods and News Magazine For Industrial Buyers

NOVEMBER 10, 1958 VOLUME 45, No. 10

B. P. MAST Chairman of the Board B. P. MAST, JR.
President

RAY RICHARDS

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ARI SIAFF

PRODUCTION STAFF L. E. McMahen Production Manager Jean Geodian Production Supervisor

CONOVER-MAST PUBLICATIONS, INC. EDITORIAL AND EXECUTIVE OFFICES 205 East 42nd Street, New York 17, New York

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1958 by C-M Business Publications, Inc.
PURCHASING is an independent journal, not
the official organ of any association. Established 1915 as "The Purchasing Agent."
Consolidated with "The Executive Purchaser."
Contents are indexed monthly and annually
by the Engineering Index Service and Business Periodicals Index.

ness Periodicals Index.

PURCHASING is published every-other-Monday by C-M Business Publications, Inc., subsidiary of Conover-Mast Publications, Inc., at 440 Post Road, Orange, Conn. Editorial and executive offices, 205 East 42nd Street, New York I7, New York, Volume 45, No. 10. Subscription rates: United States, Post-essions and Canada: \$4.00 per year; single copies 75 cents: elsewhere, \$20.00 per year; single copies, \$1.00. Please send al' notice of change of address to executive offices in New York. Second-Class postage paid of Orange, Conn. and at additional mailing offices.

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Pulse of Business

4th Quarter To Be Best

Y ou don't have to be a swami with a turban and crystal ball to come up with this observation—the fourth quarter is going to be the best of the year for business activity.

However, this doesn't mean that the rate of advance will be as fast as in recent months. In the last five months, production has regained almost 60% of the decline that began last fall. It's not likely that we'll top the pre-recession high of 145 on the Industrial Production Index before we're well into the middle of 1959.

The recovery will continue—although perhaps at a slightly irregular pace. Let's take a look at some of the key economic indicators to see where they're heading:

Steel Production Moving Upward Steel Production: Output from the nation's steel mills is now above the two million ton per week mark. That's around 75% of the industry's capacity.

Before the recent surge, steel furnaces hadn't turned out two million tons a week since the fall of 1957. When this basic industry moves upward, it means that the durable goods sector is flexing its muscles and the assembly lines are humming again.

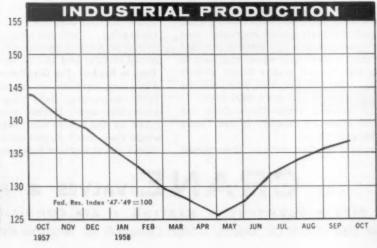
Automotive: First reactions to the '59 models have more than surpassed the expectations of the automakers. Dealers report they have more orders than they can fill.

Of course, these are only the first reports. It will be quite some time before we know if the new cars really catch on. But if the public continues to buy at present levels, Detroit's predictions may prove accurate for a change.

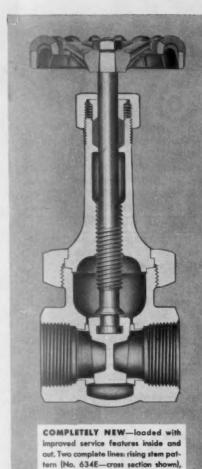
Machine Tools: Here's an industry that can't seem to really snap out of its slump. Latest report shows that new orders are up \$750,000, but this is only a 3.8% increase over the previous month. It's unlikely that machine tools will regain the highs of 1955 and 1956 until the end of next year, at the earliest.

One innovation that could boost the spirits of toolmakers is the small car that American manufacturers "might" produce in 1960.

(Please Turn Page)



A one point rise in the Industrial Production Index Brought the September mark up to 137. The previous month's figure was revised downward a point to 136 by the Federal Reserve Board.





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Circular Gives The Facts

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Pulse of Business



If this car does go into production, even in limited numbers, purchasing agents for the automakers will have to line up new tooling.

Personal Income: You'd never know that we're in the midst of pulling out of a severe recession by looking at the personal income figures. The totals have advanced every month since February—even while the production index was sinking to its low-water mark of 126 in April.

Latest figures show that personal income is running at a \$357.5 billion per year rate. That's an \$11.5 billion rise since February, and personal income still shows no sign of slowing down.

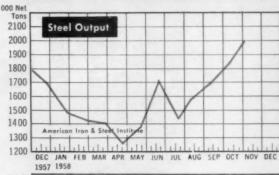
Employment and Earnings: Politicians from coast to coast debated the meaning of the unemployment figures during the recent election campaign. But one thing is certain: considerably fewer people are out of work now than last April.

The Labor Department's manufacturing production worker-payroll index is perhaps the most sensitive indicator of production and payrolls. It now stands at 155% of the 1947-49 figure, up 15 points from April.

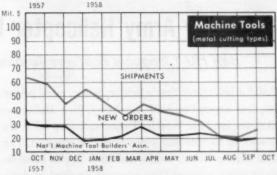
Freight Carloadings: On a week-to-week basis, carloadings by the nation's railroads are steadily increasing. Volume is still far below the 800,000 per week level of 1956, but there's a marked improvement over the early months of this year.

Stock Prices: No one else may have been optimistic about the economy early this year, but investors in the stock market certainly showed

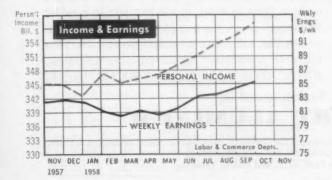
PRODUCTION

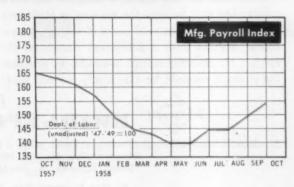






LABOR







New Army Helicopter Uses Bridgeport Aluminum

Bell HU-1 Iroquois Features Turbine Power and Greater Payload Capacity

Build a helicopter that's lighter, lower, more powerful, less expensive, said the Army. Bell Helicopter Corporation, Ft. Worth, Texas, came up with the answer in the turbine-powered HU-1 Iroquois. This ship climbs faster, weighs less and carries substantially more payload than comparable-sized, reciprocating-powered helicopters.

Everything on the HU-1 is designed for extra utility. And that includes the main rotor blade grip assembly—one of the vital parts of this great new copter. Formed from a Bridgeport Aluminum die forging, the assembly is light in weight yet provides the strength required for this highly stressed part. This new design component is the result of all the advantages that only an integrated facility like Bridgeport can offer—complete undivided responsibility and attention to every detail, from initial design to final delivery. This is why you can count on Bridgeport to supply close dimensional tolerances, excellent finishes and quality parts.

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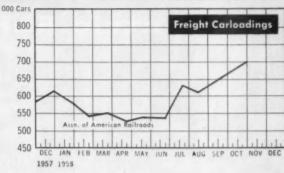
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Pulse of Business

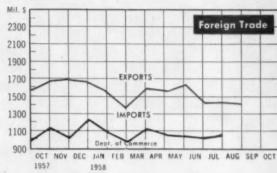








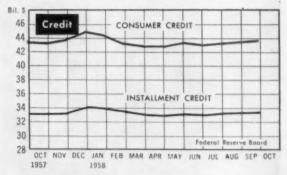
their faith the hard way — by putting their money down. The Dow-Jones industrial average rose from a low of 437 last November to more than 546 in recent weeks. The spectacular rise has pushed this important barometer to an all-time high.



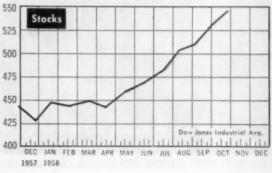
Even more encouraging than the statistics is the way many economists size up the business outlook for next year. F. W. Dodge Corporation, for example, just finished surveying 212 economists. The results make extremely optimistic reading. Here are some of the highlights:

FINANCE

All but two of the 212 economists expect gross national product to rise above its mid-1958 level next year. On the average, they expect G.N.P. to reach an annual rate of \$460 billion by fourth quarter '59. This would amount to about a 4½% rise during the year.



All but four of the economists believe industrial production will follow a similar pattern. They expect the FRB production index to hit 147 by December '59 which would represent a 5% increase.



Not only are economists bullish about next year, but industry leaders in all fields are talking happily about bigger and better sales and orders in '59. At recent conferences held by the American Management Association and the National Industrial Conference Board, the cheerful predictions for the future were a far cry from the moaning and groaning of the previous year. The P.A. will be busier than ever in 1959—with the important responsibility of boosting depleted stocks added to his normal round of purchasing activities.

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The P.A.'s Outlook

- P.A.'s See Continuing Economic Progress
- Industrial Buying
 To Pick Up First
- Local Associations Say New Orders Improving

THE BUSINESS upturn is continuing at a strong pace, according to those best qualified to know—the nation's purchasing agents.

Their combined opinion — as recorded in Purchasing Magazine's Business Confidence Index — is that the short-term economic picture is very promising. This expression of optimism boosted the business barometer to 75.3 and marked the fifth consecutive month that the index has risen.

Seventy-eight percent of the P.A.'s queried voiced the belief that business conditions in their industries will continue to show improvement during the next three months. For the most part, the rest believe there will be no change in the business pace.

Not 'Mushrooming'

Here's a sampling of the comments expressed by purchasing executives:

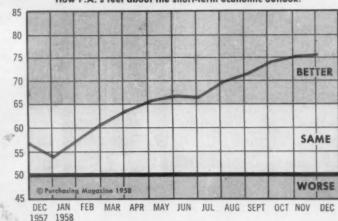
"Those industries selling to the ultimate consumer might notice a small increase. But those selling components to manufacturers should notice a significant increase, due to the all-time low of inventory levels."

"While not mushrooming, there is a decided improvement."

Reports of the business survey committees of local purchasing agent associations also are optimistic. The Chicago, Pittsburgh, Georgia, and Cana-

BUSINESS CONFIDENCE INDEX

How P.A.'s feel about the short-term economic outlook.



Another rise in Purchasing Magazine's Business Confidence Index brought it up to 75.3 in November. This marks the fifth consecutive advance of the barometer and reflects the combined opinion of purchasing agents that economic conditions during the next three months will show a considerable improvement.

dian associations all note a better business situation.

Says the Chicago association: "Reporting companies definitely reflect a strong degree of optimism, with improvement continuing in order backlogs, employment, and production."

The committee declares that "the pickup in business is also noted in the procurement of materials, with lead time lengthening to a 30 to 60 day basis. The profit structure of reporting companies also reflects this improvement."

Slower Deliveries

The Pittsburgh group has this to report: "Thirty-two percent of our questionnaires show an increase in profits as compared to 30% last month."

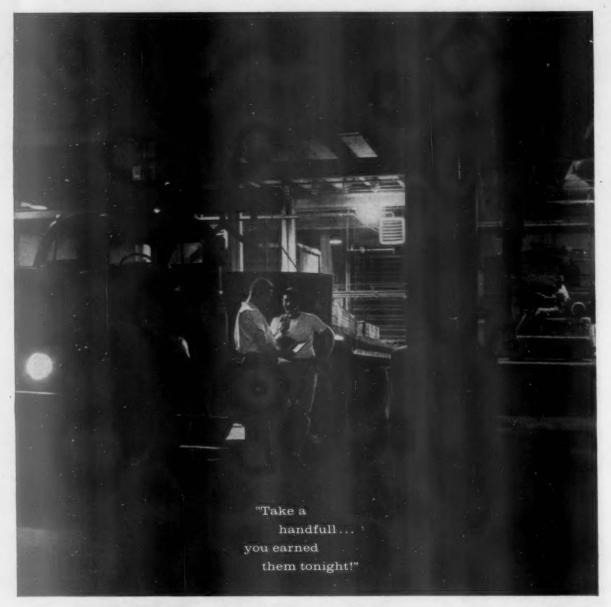
It also notes that vendor deliveries are somewhat slower than the previous month. Twelve percent of those surveyed say deliveries are slower, compared to 3% in the preceding month.

According to the Georgia association, "the recent acceleration in business will continue through the year." It reports an increase in both new orders and production.

"Not much change is reported in buying practices since most buyers are able to purchase and receive in keeping with their requirements."

The Canadian association says "moderate gains made so far in 1958 will be maintained during the balance of the year with perhaps some further modest improvement, labor permitting."

It reports that "employment shows a very slight though positive downtrend for the first time since last March." But the association hopefully adds that "this may well be a temporary situation."



The Braves never had a warmer welcome than Charlie Gates got in Milwaukee that night.

The Friday night crew was standing by. The whole plant had been alerted for weekend work. Charlie had just come through with a real payload-a truckload of Inland Steel sheets, urgently needed by a sheet metal fabricator who was working on a contract for the top platforms of power mowers. Whether or not this power mower manufacturer kept a valuable contract depended on the fabricator's

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Price Trends

- Nonferrous Prices
 Show Steady Rise
- Wholesale Price Index Unchanged; Metals Up

FIRMER prices for nonferrous metals have purchasing agents watching and wondering. Will prices rise still further or will they begin to level out?

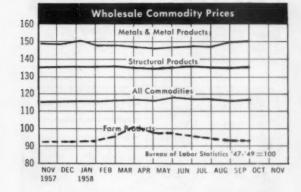
Here's how the situation shapes up in some of the major commodities:

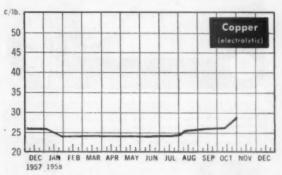
Copper: A combination of factors—including strikes and increased demand—has brought the copper market to life. A series of price hikes by both producers and custom smelters has forced many P.A.'s into the market for the first time in many months. Many buyers are afraid the price is going still higher. Stocks of refined copper are down considerably from the 376,287 tons recorded at the end of September. With fabricators' new orders continuing to improve, it's likely that stocks will shrink even more and that the price of copper will continue to rise.

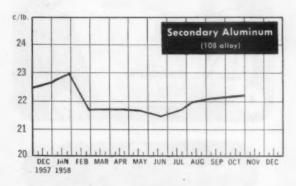
Lead: An increasing number of purchasing executives are entering the lead market. In fact, domestic deliveries of refined lead in September alone were the highest of any month since the previous September.

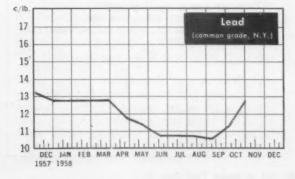
Most of the sales are going to P.A.'s for battery manufacturers. Though the volume of lead sales is high, most of the purchases are for small tonnages.

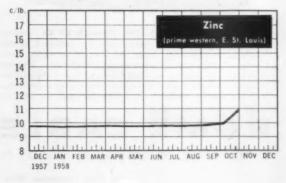
Zinc: There are indications that the recent quotas placed on zinc imports may be just tem-



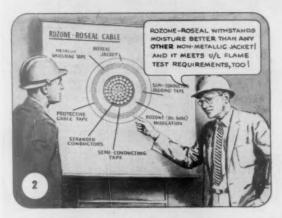


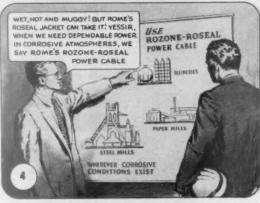










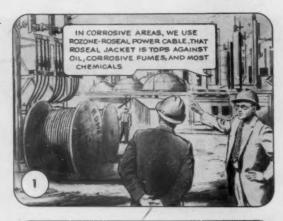




Available in voltage ranges through 15 kv Rozone-Roseal preferred power cable may be installed in air, conduit, underground ducts, or directly in earth. Your choice of premium ozone-resistant insulations: Rozone (oil-base) or Rozone A (butyl-base). For complete information, contact your nearest Rome Cable representative and ask for Bulletin RCD-700. Or mail the coupon today.

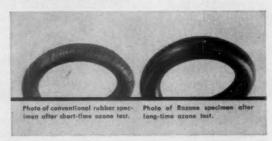
ROME CABLE

CORPORATION





A matter of FACT



Rozone insulation is high in dielectric and impulse strength and has excellent resistance to corona and ozone cutting.

FREE BULLETIN describes the benefits of Rome's preferred high-voltage power cables.

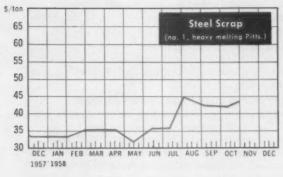
ROME CABLE CORPORATION Department 720, Rome, New York

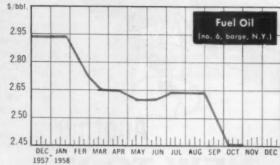
Please send me a copy of the new Rome Cable Bulletin RCD-700.

Name

Type of business

Price Trends





porary. The Administration hopes to get international agreement for its plan calling for all producing countries to cut their exports 20%.

On the domestic scene, purchasing agents for steel companies are sharply increasing their purchase orders for zinc. Demand for Prime Western grade is particularly strong.

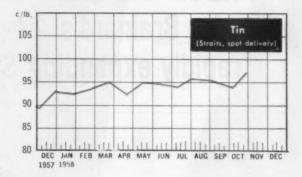
Aluminum: Aluminum producers are boosting their output as a result of increased demand from buyers. Sales in the second half of 1958 should show a 10% increase over the first half.

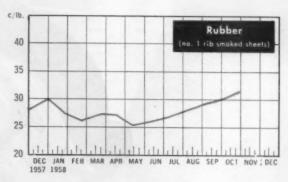
Some of the sales rise reflects increased use of aluminum in cans. The latest user is an important West Coast food processor. P.A. for the company reports he is currently buying 100,000 aluminum cans per day.

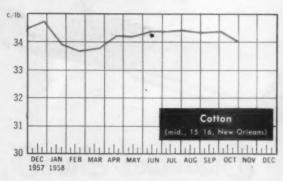
Tin: The steady tin market in recent weeks is due primarily to the severe export quotas set up under the International Tin Agreement. However, it's expected that demand from P.A.'s by the end of the year will be considerably greater than it is at present.

Wholesale Prices: Latest figures released by the Department of Labor show that the Wholesale Commodity Price Index remained unchanged at 119.1 percent of the 1947-49 level. The 1958 peak came in March when the index registered 119.7.

Metals and metal products rose slightly (0.2%) in the latest report. The increase was caused chiefly by higher prices for wire and cable, steel mill products, and plumbing equipment. These advances more than offset small price declines in iron and steel scrap and certain fabricated structural products.









for Brainard's

The PNRC pneumatic stretcher for extra fast, heavy duty banding

Here's a straight-line, duck-bill pneumatic stretcher that brings production line efficiencies to applications requiring heavy duty banding. Particularly adaptable for use on coils, rounds, hexes and odd-shaped heavy bundles, this new stretcher is a compact, easy-to-use hand tool that threads easily, tensions smoothly and breaks strapping cleanly with a simple forward motion of the wrist.

Why continue with slow, cumbersome, obsolete equipment when this new labor-saver is as near as your Brainard representative . . . it's the PNRC, the newest in Brainard's fast-growing family of fine strapping tools.

For irregular or round incompressible packaging using the narrower widths and lighter gauges, ask your Brainard representative about the equally remarkable PNHK counterpart of the PNRC. The PNHK assures users fast, effortless, controlled tensioned strapping for a wide variety of products now being packaged by manual methods. Write for detailed description, prices on either the PNRC or PNHK.

rapidly expanding Strapping System

Brainard Safe-Ty Strapping SHARONSTEE

BRAINARD STEEL DIVISION OF SHARON STEEL CORPORATION

LARCHMONT AVE. . WARREN, OHIO

Pulse of Business

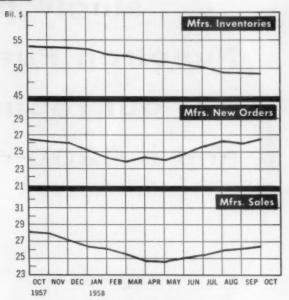
Sales, Inventories, Orders

New Orders, Sales Rise; Inventories Still Low

Manufacturers' new orders and sales continue to rise, according to the latest Commerce Department report, while the rate of inventory reduction has slowed further.

New orders increased \$700 million to \$26.8 billion in September. This marked the first time this year that new orders topped the like month of '57. Manufacturers' sales jumped \$300 million. Most of the gain was in durables, including large increases by machinery and fabricated metals manufacturers.

However, the November report of the National Association of Purchasing Agents noted that "buyers are not now embarking on an inventory accumulation program." The NAPA states that productive capacity still exceeds demand and that no major shortages are in view.



Dept. of Commerce—Seasonally adjusted

Manufacturers' Sales	1	957	1	1958		
Seasonally Adjusted (Millions of Dollars)	Aug.	Sept.	June	July	Aug.	Sept. (p)
All Manufacturing Industries	26,638	28,215	25,747	26,284	26,400	26,700
Durable-goods industries	14,297	14,132	12,086	12,256	12,400	12,600
Primary metal	2,362	2,182	1,854	1,917	1,978	n.a.
Fabricated metal	1,520	1,547	1,397	1,454	1,470	n.a.
Machinery	4,281	4,314	3,780	3,808	3,810	n.a.
Transportation equipment	3,448	3,407	2,610	2,550	2,579	n.a.
Lumber and furniture	925	940	822	836	841	n.g.
Stone, clay, and glass	708	668	645	676	660	n.a.
Nondwable-goods industries	14,341	14,083	13,661	14,028	14,000	14,100
Food and beverage	4,357	4,278	4,357	4,371	4,328	n.a.
Tobacco	354	378	382	390	372	n.a.
Teatile	1,072	1,040	1,025	1,061	1,086	n.a.
Paper	915	932	903	937	944	n.a.
Chemical	2,008	1,951	1,899	1,979	1,998	n.a.
Petroleum and coal	2,920	2,803	2,682	2,806	2,802	n.a.
Rubber	514	481	445	478	n.a.	n.a.
Manufacturers' Inventories						
Seasonally Adjusted (Millions of Dollars)						
All monefacturing industries	54,203	54,166	50,246	49,777	49,400	49,200
Durable-goods industries	31,742	31,820	28,528	28,311	28,100	28,000
Primary metal	4,326	4,344	4,169	4,122	4,111	n.a.
Fabricated metal	3,151	3,123	2,844	2,814	2,766	n.g.
Machinery	10,609	10,658	9,446	9,323	9,202	n.g.
Transportation equipment	8,035	8,049	6,595	6,584	6,624	n.a.
Lumber and furniture	1,872	1,877	1,776	1,773	1,764	n.a.
Stone, clay, and glass	1,210	1,251	1,234	1'228	1,218	n.a.
Non-durable goods industries	22,461	22,346	21,718	21,466	21,400	21,200
Food and beverage	4,805	4,684	4,761	4,706	4,579	n.a.
Tobacco	2,024	2,000	1,859	1,836	1,843	n.g.
Textile	2,649	2,631	2,572	2,550	2,535	n.a.
Paper	1,429	1,410	1,435	1,413	1,430	n.g.
Chemical	3,737	3,741	3,747	3,722	3,737	n.a.
Petroleum and coal	3,517	3,597	3,348	3,314	3,303	n.a.
Rubber	1,074	1,074	986	980	n.a.	n.a.
Manufacturers' New Orders						
Seasonally Adjusted (Millions of Dollars)						
All manufacturing industries	27.325	26,565	25,785	26,450	26,100	26,800
Durable-goods industries	13,160	12,519	12,245	12,512	12,200	12,600
Nondurable-goods Industries	14,165	14,046	13,540	13,938	13,900	14,100
For More Information Write No. 164	(r) Revised.		(p) Prelin			

For More Information Write No. 164
←on Inquiry Card—Page 32

When a motor we installed

single phased,—
Fusetron Fuses saved
our reputation
and a \$200 rewind job

C. B. Meldrum, OWNER
MELDRUM ELECTRIC COMPANY
HOUSTON, TEXAS

Mr. Meldrum continues:

"Recently I sent several of my men to install a 50 h. p. air conditioning unit for a customer.

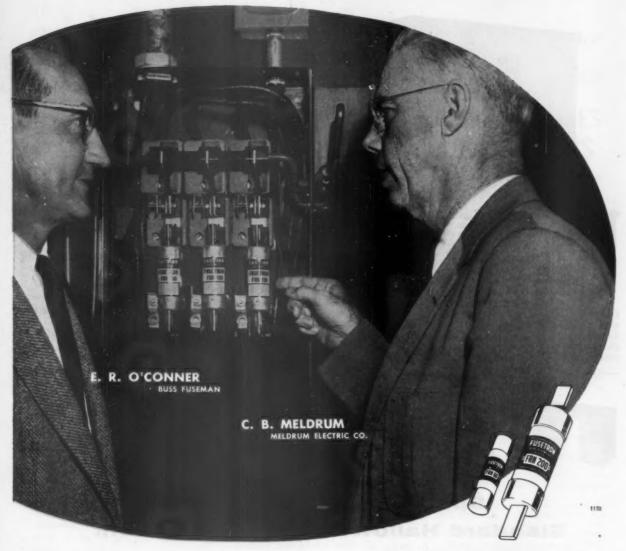
"It seems that my man who wired the 200 amp. switch failed to tighten a lug. He just hung the wire on the lug and then forgot to tighten it.

"When the unit was started, it didn't take long for trouble to develop. The loose connection caused one Fusetron fuse to blow. The motor started to run single phased but before any damage could result the other Fusetron fuses protecting the motor also blew and shut down the motor.

"My company stands behind its work. If the motor would have burned up, we would have rewound it without question. I know this would have cost us at least \$200.

"What is important too, our reputation was saved and we have a satisfied customer. If the Fusetron fuses had not given us an opportunity to go back and do the job right before the motor was damaged, we would have been in a 'hot' spot."

For safe, modern, money-saving protection install FUSETRON dualelement FUSES and BUSS Hi-Cap FUSES throughout entire Electrical System!



Why Fusetron Fuses Provide Safest, Simplest Way to Prevent Damage from Single Phasing

When single phasing occurs, the current in the remaining phase increases about 100%. (Theoretically 73% but change in efficiency and power factor makes it about 100%.

This $100\,\%$ overload on Fusetron fuses of motor-running protection size opens them and shuts down the motor.

Such dependable protection against motor burnouts from single phasing has never before been available.

You too, Can Get Safer, More Dependable and Money-Saving Protection with Fusetron Fuses

FUSETRON dual-element fuses provide 10 point protection against electrical troubles. This is unlike circuit breakers or ordinary fuses which, except in rare cases, protect only against short-circuits.

In Addition: Fusetron Fuses Require No Maintenance or Recalibration

They are calibrated at the factory by engineers. Once properly installed, they require no inspection or downtime necessary on mechanically operated devices. There are no hinges, pivots or contacts to stick or get out of order. Dust, corrosion or oxidation cannot increase a Fusetron fuse's capacity or lengthen its blowing time.

After years of inactivity, a Fusetron fuse will give the same safe, dependable protection if called upon to open as it would have on the day it was installed.

For Loads above 600 and up to 5,000 amps ... Use BUSS Hi-Cap Fuses

They have an interrupting capacity sufficient to handle any fault current regardless of system growth.

They can be coordinated with Fusetron fuses on feeder and branch circuits to limit fault outages to circuit of origin.

for more information, write for . . . Bulletin FIS on Fusetron fuses
Bulletin HCS on BUSS Hi-Cap fuses.

BUSSMANN MFG. DIVISION - McGraw-Edison Co. University at Jefferson, St. Louis 7, Mo.



BASIC MODELS

Model 640-Unit Bench

One bench top (steel, Presdwood-covered steel, laminated wood or ShopTop). One 4-drawer pedestal unit. One cabinet unit with adjustable shelf. Two bases.



Model 643-Unit Bench

One bench top (steel, Presdwood-covered steel, laminated wood or ShopTop). Two 4-drawer pedestal units. Each drawer glides on roller bearings, has individual cylinder lock and flush pull. Two bases.



Model 646—Unit Bench

One bench top (steel, Presdwood-covered steel, laminated wood or ShopTop). Two cabinet pedestal units. Each has adjustable shelf, chrome plated locking handle. Two bases.

















Space Engineering with Standard Hallowell Shop Equipment



Typical installation of HALLOWELL unit work benches. They can be set up in continuous line, back to back, or singly in shop, lab, toolroom or on assembly line.

makes it easier, faster and more economical
to outfit an area and rearrange it
to meet changing requirements

Space engineering with standard HALLOWELL Shop Equipment overcomes all the disadvantages of specially designed and custom-built equipment. Its cost is only a fraction that of custom-built units. It is easy to order and get from leading shop equipment dealers; can be set up fast; can be quickly rearranged to meet changing requirements; and is extremely versatile. Standard HALLOWELL interchangeable accessories (backboards, end pieces, top shelves, wire-mold sections, electrical panels, testing panels, and storage wall units) can be added as needed to increase the usefulness of this equipment.

Ask the authorized dealer nearest you for complete information on the standard Hallowell line of work benches, shop desks, stools and chairs, tool stands, cabinets, storage walls, shelving. Write Columbia-Hallowell Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.



Jenkintown · Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co. • National Machine Products Co. • Nutr-Shel Co. • SPS Western • Standco Canada Ltd. • Unbrako Socket Screw Co., Ltd.

Washington Report

Nonferrous Upturn Halts Stockpile Demands

R ISING MARKETS in nonferrous metals have taken the pressure off the U.S. government to support copper, lead and zinc prices. But the underlying problem persists of supporting domestic ore producers—and underdeveloped countries whose only source of income is their raw materials.

Strikes in the minefields of Northern Rhodesia and Canada have served to whittle down the overhang of copper, and this coincided with the firmer tone of business to create a better price.

When copper prices exceeded 27½ cents a pound, Senator Mike Mansfield of Montana withdrew his request that the White House buy 100,000 tons at that price.

There are still two major problems which call for basic answers:

1. Domestic producers of highcost ore want some government policy that will permit them to keep their mines operating.

2. British and other Western European trading nations feel that unless the West supports higher price levels for ore from underdeveloped countries, it will lose these countries as trading areas.

P.A.'s Still Getting Top Priority Directives

SPECIAL DIRECTIVES carrying a top priority on procurements are still being issued by the Office of Industrial Mobilization (BDSA) at the rate of 2500 a year.

This volume represents several hundred million dollars worth of military components each quarter. The items are mostly electronic components and scientific instruments.

Here is the way the directives work: Where the priority ratings issued by the military will not insure delivery, the purchasing agent for the contractor informs the government and asks for a directive. The service concerned then calls on the Office of Industrial Mobilization to issue such a directive.

In most cases, the items are for the missile program—or one of similar urgency—and the problem is getting a supplier to devote a facility to the production of the required item. As such facilities are usually tied up with other work, the directive is needed primarily to get the supplier off the hook on his other commitments, and permit him to devote the manufacturing space to the item called for by the directive.

Mfrs Get Protection On Proprietary Data

PROPRIETARY data will get greater protection under a new revision to the Armed Services Procurement Regulations (Revision No. 38, ASPR).

The revision has three major effects:

1. Definitions are clarified so that there is no conflict between "design data" and "proprietary data." Previously the line was hazy and contractors often furnished one along with the other.

2. Where the specifications for a product require disclosures of proprietary data and the body of the contract treats the requirements differently, the contract terms will supersede the "specs." This protects the contractor against language in the "specs" that does not conform to the new policy.

3. When the contractor develops proprietary data at his own expense, he will not be required to disclose same. Also, when a contractor develops data and then undertakes an R&D contract in which he uses this previously developed data, the services will pay him for that data. At the same time, the military encourages the contractor to license out his patents—to remove the stigma of monopoly. (Turn Page)



It's Easier
and
Less Costly

to BUY MELLOWES LOCK WASHERS

because Mellowes simplifies your "paper work"

Cutting corners in office routine is just as important in business today as cutting costs and saving time in other operations. That's why we, here at Mellowes, have adopted certain policies to reduce the amount of "paper work" you have to do when you buy lock washers from us.

The freight is prepaid on all shipments of Mellowes Lock Washers of 200 lbs. or more. This policy alone eliminates a lot of checking and rechecking, costly correspondence and accounting procedures.

• We accept your "collect" long distance calls when you want to place an order in a hurry. Next time you need lock washers fast, phone Mellowes collect at Milwaukee. The number is COncord 4-5090.

Your orders for Mellowes Lock Washers are shipped the same day received via a fast carrier, eliminating the need for follow-up correspondence.

The packing slips which go with each order for Mellowes Lock Washers are fully descriptive. You know what is in each carton, in each shipment.

Invoices from Mellowes are clear and accurate and mailed promptly to save time and work in your follow-up and accounting departments.

Your correspondence with Mellowes is handled with speed; inquiries regarding prices, delivery, special designs, get prompt attention.

Price lists, catalog sheets, descriptive literature from Mellowes is mailed immediately at your request—at no cost to you.

Mellowes sales representatives are qualified and eager to give you immediate service. If you don't know the Mellowes man in your territory, write today for name and address.

Mellowes policies are sure to save you time and money, not only in cutting down your "paper work", but in other ways, too. We invite you to put them to the tost.

The Mellowes Company 141 E. Nash Street · Milwaukee 12, Wis.



A. W. Mellowes, Founder and Chairman of the Board

Note:
This is one of a series of advertisements presenting Mellowes customer-service policies which benefit you, the distributor or user of Lock Washers.

For More Information Write No. 168 on Inquiry Card—Page 32



ARE YOU GETTING SHORT CHANGED ON YOUR SHIPPING DOLLAR?

Some airfreight and truck carriers today advertise so-called "bargain" rates which actually impose higher minimum weight charges and mean less service. Be sure you compare Railway Express rates and service before you ship with any other carrier.

Here are down-to-earth facts on Railway Express Service

widest coverage—Railway Express serves some 23,000 communities to give you mass distribution—with one company responsibility. You reach every major market in the U.S., and with Railway Express International Service, most every major market abroad. No more worries about delays and divided responsibility in transfers between two or more carriers.

SPECIAL LOW RATES—You get door-to-door delivery, at no additional cost within REA vehicle limits in U.S.A. And Railway Express offers special low commodity rates on ready-to-wear merchandise, graphic arts materials, hosiery, shoes, drugs, import-export traffic and many other categories. Call your nearest Railway Express Agent.



Washington Report

Barge Lines Fight Railroad Rate Cut

BARGE OPERATORS in the Midwest are fighting a proposal by the railroads to cut certain selective rates. This is the first important case involving intercarrier competition to come before the Interstate Commerce Commission since the passage of the new Transportation Act.

The rails want to lower rates for hauling printing paper from a new mill in St. Francisville, La., to Chicago. According to the barge lines, the new rates would be only 68% of the railroads' fully distributed costs-and the difference would have to be made up by overcharging on other railroad traffic.

W. Y. Wildman of Chicago, the attorney for the barge operators, told Purchasing Magazine:

"The railroads want to charge almost the same rates for carrying paper 900 miles from Louisiana to Chicago as they do from the Wisconsin mills to Chicago. This would bring their rates down to practically the same level as the barge lines charge."

The barge operators and the Waterways Freight Bureau say that they're not asking the Commission to hold rates up merely so that P.A.'s will have to pay more on their traffic bills. They claim that rates should be readjusted so traffic will flow over the most economical form of

transportation.

Richard J. Hardy, of the Inland Waterways Common Carriers Association, stated "in the past, the railroads have sought to put the water carriers out of business by selective below-cost rate cutting. The water carrier industry has long championed the idea that the inherent advantages of the various modes should be the principal, if not the sole, determinant in the distribution of our nation's traffic."

This is a real hot one for the ICC. No matter how it decides, a powerful transportation group will be quite dissatisfied.

-A. N. Wecksler.

no more knuckle-busting.

New R | D No. 450

Portable Tristand Chain Vise



Here's a real time saver. Not only do you get a complete work bench that's truly portable, but now you get a chain vise that's extra easy and fast to operate. Handle is right up on top where it's always handy. Handle and tightening nut are anchored to vise base . . . can't pull out.

Vise base, that overhangs front legs for clear tool swing, has hanger slots for tools, 3-size pipe bender, rear pipe rest and adjustable ceiling brace screw. Folding legs and integral tray set up easily and lock in position for rigid work base. Snap chain holds folded legs closed for easy carrying . . . no loose parts. Rubber grommets in tristand feet prevent creeping. See and try this more-for-your-money RIDOID Top Screw Chain Vise at your Supply House!

New RIDOID Bench Chain Vises have same Extra-Efficient Top-Screw Adjustment

> 5 Sizes for 1/4" to 8" Pipe Conduit or Rod



The Ridge Tool Company, Elyria, Ohio, U.S.A.

For More Information Write No. 170 on Inquiry Card-Page 32

REVOLUTIONIZED by the PAR PROCESS!

- PAR ... Originated by TRS with the invaluable collaboration of some of industry's top production engineers who sought a major break-through in the automation of assembly operations to reduce costs.
- PAR ... A name given by TRS to its Production Automated
 Riveting process . . . continuously developed and perfected for 3 years. Proved successful in some of industry's most efficient plants. Now, TRS has sufficient
 engineers especially trained in the PAR process to
 serve all manufacturers.
- PAR ...It makes riveting practically a new fastening method through efficiently integrated and automatic . . .
 - 1. FEEDING of tubular rivets or related products.

- 2. TRANSFER of parts between riveter stations by means of sliding or rotating fixtures or dial tables. Or through synchronization with conveyors.
- SEQUENCING the operation of from 3 to 15 rivet setters which make all fastenings simultaneously or in any desired sequence.
- 4. CONTROL of setting force as required by parts thickness or material characteristics.
- 5. SENSING of improper conditions and stopping equipment to avoid injury to parts, equipment or operator.
- 6. EJECTION of parts as required.



TUBULAR RIVET & STUD COMPANY

QUINCY 70, MASS.



Midwest Office & Warehouse in Chicago. Branches: Atlanta, Buffalo, Charlotte, Dallas, Detroit, Indianapolis, Los Angeles, New York City, Philadelphia, Seattle, St. Louis. See "Yellow Pages" for phone numbers.

WESTERN ELECTRIC

boosted production rate 80%

Western Electric engineers sought the lowest cost method of assembling the many components of the wall telephone baseplate. TRS engineers worked with them in solving this fastening problem.

Here is the specially engineered Multi-Head

Riveter that resulted. Ten automatic riveting machines are combined with a specially designed rolling assembly fixture to minimize handling of the five parts of the assembly and, in two fast operations, automatically attach parts to baseplate with ten rivets in a complex pattern. It was estimated that the same assembly operation could have required approximately 35% more labor if other applicable facilities had been installed.

And that wasn't all. Later, when production requirements increased, the addition of a second transfer fixture and a second operator boosted the production rate 80%.

Western Electric know-how shows in the profitable solution . . . so does TRS ingenuity and experience.

You get the benefits of TRS "recognized ability" when you buy any TRS iveting Machine . . . from the simplest standard type to a complicated special design.

TRS offers more machines, to more exactly meet your need . . .

will lease but likes to sell . . . guarantees

PAR ... It's a TRS Process for very good reasons!

performance and sticks by you with all-out service.

Obviously, there are two critical elements in the PAR Process. Essential is the special and extensive knowledge and experience needed to design an integrated system of standard or multi-head riveters, feeders, transfers and controls for the particular assembly involved. Equally important are superior knowledge and experience in the design, tooling and application of Multi-Head Riveters because these are usually employed.

TRS originated Multi-Head Riveters over three years ago and is the only experienced source of these machines. Further, because this TRS development opened up new possibilities for automating the riveting process, TRS was able to begin three years ago to develop the special experience and application engineers required to fully meet the requirements of the PAR Process.

PAR ... A New Opportunity to Reduce Direct Labor Charges

With this new help, hundreds of manufacturers . . . large and small . . . can effect substantial savings in direct labor charges, increase production rates, decrease parts spoilage and machine down-time. Look into it now if your product can be riveted, and especially if several rivets are involved.

The yearly amortized cost of the TRS Multi-Head Riveter equipment is low because it will not be obsoleted by changes in product design or production line.

To save more...To protect against equipment obsolesence...don't buy any Riveting Machines until you investigate the PAR Process

DA BANNA BARA

You're not required to use TRS Rivets but you'll be better off if you do There are no contracts or obligations involved in the

There are no contracts or obligations involved in the PAR Process. However, it is true that the more automatic you make your riveting, the more important it is to use rivets that reduce operating troubles and machine down-time. And, we can give you good, factual reasons why TRS Tubular Rivets are more reliable in essential qualities and uniformity. Ask for the facts... judge for yourself.

Advt. Copyright by Tubular Rivet & Stud Company, 1958

For More Information Write No. 171 on Inquiry Card-Page 32

TYPICAL SCHRADER SIMPLIFIED VALVE DESIGN

.. another reason why your air system installations will perform best.

A-Mounting holes always conveniently located.

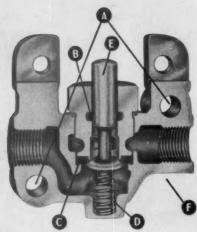
B-"0" rings used for surest airtight seal.

C-Dil-resistant synthetic rubber used in washers for positive leakproof seat.

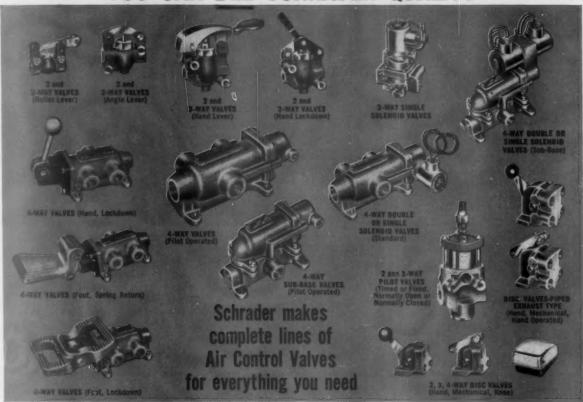
D-Stainless steel springs: rust resistance, lengest service life.

E-Sturdy plated plungers, quick acting, smooth-operating.

F—All parts designed for greatest air flow, longest life and simplicity of replacement and interchangeability.



INSIDE EVERY SCHRADER VALVE YOU CAN SEE SCHRADER QUALITY



Plus hundreds of Air Cylinders and accessories for every need



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A. SCHRADER'S SON · Division of Scovill Manufacturing Co., Inc. 473 Vanderbilt Avenue, Brooklyn 38, N. Y.

QUALITY AIR CONTROL PRODUCTS



BUSINESS IN MOTION

To our Colleagues in American Business ...

The initials T.A. stand for Technical Advisor. This is not a fancy title for the Revere representatives who call on prospects and customers, but rather one that designates the man having that title as being thoroughly schooled and qualified to aid manufacturers in the proper selection of non-ferrous metals.

To be a Revere Technical Advisor a man must be completely conversant with metallurgy and its application to present-day production. And, if you ask him

the type of question that cannot be answered on the spot then he is qualified to present the problem to Revere's Research Laboratories in a manner that will result in a satisfactory answer.

To show you how Revere's Technical Advisory Service can render you valuable aid we cite the following example: Years ago the country's oldest manufacturer of milk coolers came to Revere with the idea of building copper-lined coolers to supplant their galvanized ones which had produced corrosion and other problems.

Revere's Technical Advisory Service worked with them in the designing of a satisfactory product. It took time, plenty of time, and experimentation. But the result was well worth the effort . . . a deoxidized Revere copper for the lining and Revere Copper Tube for the heat exchangers. But Revere's service did not stop there. For in order to keep down costs the manufacturer called on Revere's Technical Advisory Service, from time to time, to help them redesign their

cooler for greater efficiency and economy. Revere Research also showed this manufacturer how to overcome their soldering and welding problems.

Because of the continuing efforts of Revere's Technical Advisory Service, in connection with Revere's Research Laboratories, this manufacturer is today in the position of being able to offer a most efficient cooler at the least possible cost. Claims of this manufacturer for this cooler are that it will cool milk, uni-

formly from top to bottom without mechanical refrigeration and electricity. That the cream on top will never warm up. That the cooler produces continuous 24hour cream line cooling which removes the heat from the cream line on the top as well as from the milk on the bottom. That temperature of the milk always goes down, never up, between milkings...not one B.T.U. of heat that passes through the side walls or the bottom ever reaches the milk. This is still another example of how Revere's Technical Advisory

Service was able to fit the metal to the job in order to produce a superior product at the least possible cost.

Practically every industry you can name is able to cite similar instances. So we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower costs by specifying exactly the *right* materials.





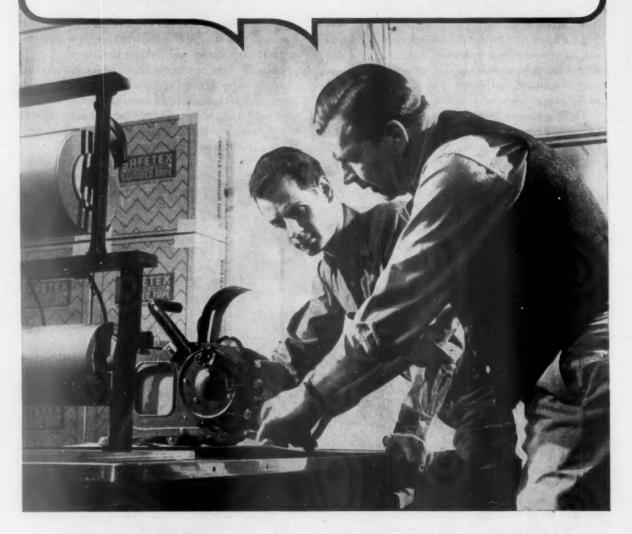
REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801 Executive Offices: 230 Park Avenue, New York 17, N. Y. So the idea is to keep the brush clean and the water cup full?

Right, son! And when you run out, the tape is right over there.

Safetex?

Safetex!



Your Shipping Department needs a gummed tape that seals the first time, every time. That's why Safetex is made under such rigid control—from parent roll of paper to carton-packing for shipment. Let Safetex prove itself in your shipping room.

SAFETEX SUPERSTANDARD GUMMED TAPE

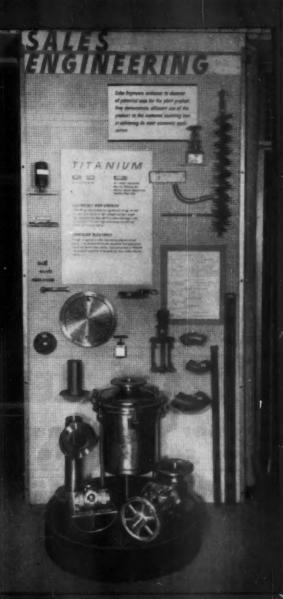


CENTRAL PAPER COMPANY . MENASHA, WISCONSIN



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FABRICATING, WELDING, MACHINING
TITANIUM AND TITANIUM ALLOYS

Many of our Titanium products have been installed in chemical, paper, and pulp plants. Pipe, Tubing, and Fittings are available in sizes 31/2" O.D. and larger . . . smaller sizes can be produced, depending on the quantity needed. Let us know your requirements; we will be glad to work with you on any Titanium project — large or small.



Fabricated Pipe, Pressure Vessel and 4" Valve.







4" Titanium Valve installed in Chemical Plant.

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ADDRESS_



WHAT'S NEW WITH ALUMINUM

A page of new products and availabilities for the interest and information of the purchasing agent. If you would like detailed literature on each subject, mail the coupon below.

Bright finish welding wire

Now an entirely new type of bright welding wire for MIG and TIG welding processes is available for high strength welding . . . Kaiser Aluminum's King* brand welding wire.

It's available in a complete line of welding rods and electrodes in a broad range of alloys—including new all-purpose alloy 5183, developed specifically for welding the high strength magnesium-bearing aluminum alloys 5083 and 5086.

The consistent high quality of King brand bright finish welding electrodes and rods is achieved by rigid production and inspection controls, including radiographic and destructive testing of actual welds.

*Kaiser INert Gas

2. Wider sheet, heavier plate

The production of wider sheet, heavier plate and bigger coils is now made pos-



Giant 10,000 lb. aluminum ingot being lifted from direct chill casting station at Kaiser Aluminum's Ravenswood plant. Next stop — the hot line!

sible by the opening of Kaiser Aluminum's new 168-inch, 4-hi reversing hot mill and 100-inch, 5-stand continuous mill at Ravenswood, W. Va.

Sheet and plate in width to a maximum of 144 inches and finished coils weighing up to 8500 pounds are now included within final availabilities. Foil in gauges as light as 0.00025 inches and widths to 66 inches is also in production.

3. Rolled tooling plate

Produced for today's tool design requirements, Kaiser Aluminum's new Rolled Tooling Plate opens up exciting new avenues to cost cutting.



A typical large aircraft assembly fixture. Use of aluminum tooling plate provides greater portability and simpler set-up without need for overhead cranes or lift trucks.

Reasons: (1) It's machined both sides to provide a flat base for accurate layout and measuring; (2) it offers a finer grain structure, freedom from porosity, higher strength, finer finish and better welding characteristics; (3) it weighs only one-third as much as steel, handles easily without the need for expensive positioning equipment.

Among the growing list of industries profiting from new Kaiser Aluminum Tooling Plate: aircraft, electronics, appliance, automotive, plastics, foundry and marine.

4. High strength yet ductile casting alloys

Now, by using one of Kaiser Aluminum's new high purity casting alloys—X357, A356 or C355—permanent mold and sand castings can be designed and produced to be competitive with more expensive fabricated products including forgings.

By holding iron and other impurities to a minimum, and with Kaiser Aluminum's close metallurgical production control, these superior casting alloys permit high temperature artificial aging to develop full strength potential without brittleness.

For example—castings made of our high purity alloys, can be produced with increased tensile and yield strengths or redesigned to have the same strength characteristics with significant weight reductions.



THE BRIGHT STAR OF METALS

Please send me detailed literature on the subject circled below:

- Bright Finish Welding Wire
- 2. Sheet And Plate
- 3. Rolled Tooling Plate
 4. High Purity Casting

Kaiser Aluminum & Chemical Sales, Inc. Dept. 975, 919 N. Michigan Avenue Chicago 11, Illinois

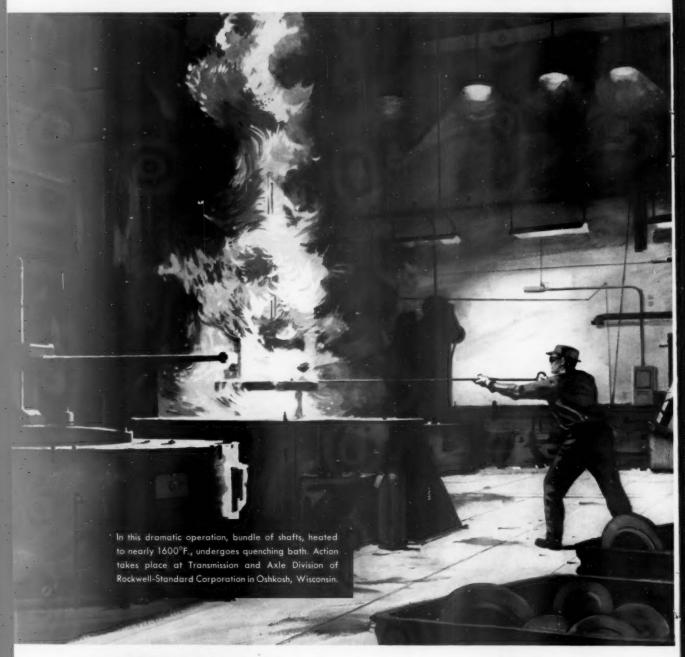
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NAME______COMPANY_____

CITY ZONE STATE

Correct Lubrication in Action...

43,907 machine





Complete Engineering Program
Proved Petroleum Products

Mobil

SOCONY MOBIL OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP., MOBIL OVERSEAS OIL CO., INC.

production hours saved!

In three years, Rockwell-Standard Corporation cut downtime over 36%—with the help of Mobil!

43,907 machine production hours! A worthwhile and profitable bonus. Rockwell-Standard Corporation's Transmission and Axle Division at Oshkosh, Wisconsin, made this saving through a Mobil Program of Correct Lubrication.

Plant maintenance engineers worked as a team with Mobil lubrication engineers. First, lubrication was put on a *scheduled* basis. This insured regular protection . . . cut thousands of repair hours. Oil contamination problems were solved

... major repairs avoided. Mobil laboratories and Mobil specialists were called on for technical assistance.

In 1957 alone, this concentrated effort to reduce maintenance costs saved \$33,063. In addition, dollars gained from increased production were many times this amount. This is *Correct Lubrication in Action!* Hundreds of plants have found it the answer to improved profits. Perhaps you will, too. Why not call a Mobil engineer and find out?



\$19,520 saved on hydraulic-system maintenance. Valve failures caused severe production loss on multiple-spindle drills, boring machines and grinders. Mobil product solved problem . . . increased production by 4,000 hours per annum.



New storage and mixing tanks with automatic controls were installed as part of Mobil program. This system increased soluble-oil storage capacity . . . simplified oil purchasing . . . eliminated manual mixing of oil and water . . . saved \$1,075 per year.



\$3,000 air-compressor shutdown and overhaul avoided. Severe scoring was occurring in cylinder of vitally needed compressor. Mobil recommended oil that has kept compressor operating efficiently for past two years.



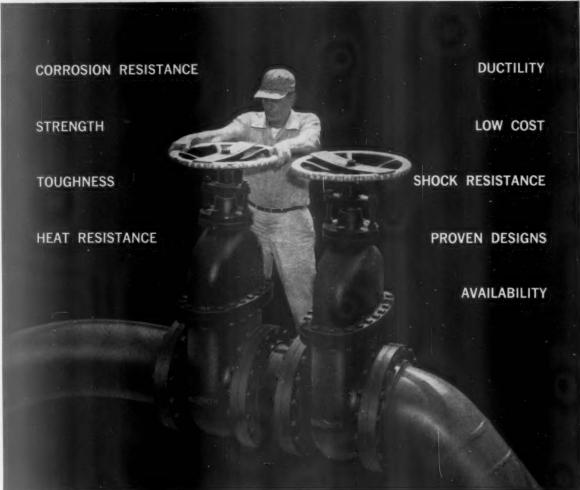
\$27,225 saved on gear hobbers in 12-month period. Mobil and Rockwell-Standard personnel solved pump and fluid motor failures. New maintenance system reduced oil contamination, increased pumpmotor life 400%.

Correct Lubrication

Another reason You're Miles Ahead with Mobil!

In your plant piping systems you get all these advantages with

WALWORTH DUCTILE IRON VALVES



Walworth ductile iron valves give you - at low cost - corrosion resistance comparable to gray cast iron . . . strength approaching that of carbon steel . . . long life expectancy and minimum maintenance. Proven shock resistance . . . Walworth ductile iron valves have functioned satisfactorily after being heated to 1350°F and suddenly quenched.

When you buy Walworth ductile iron valves you get the benefit of Walworth's proven engineering and designs. Sizes 1/2 to 24 inches, screwed or flanged ends, OS&Y and NRS types.

For your copy of the new circular on ductile iron valves, contact your local Walworth distributor, or, write Walworth direct.



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For More Information Write No. 179 on Inquiry Card-Page 32

For More Information Write No. 180 on Inquiry Card-Page 32-

36

PURCHASING

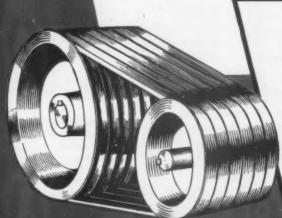


V-belt **QUALITY** meeting industry's severest needs

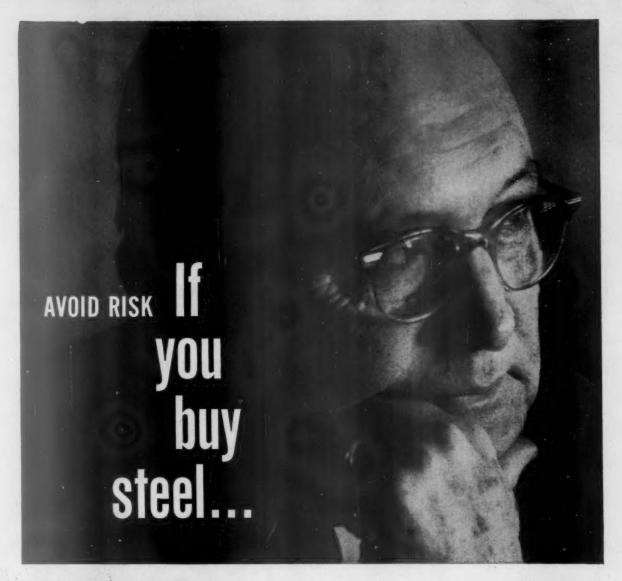
Immediate SERVICE to solve customer's problems

Special attention to CUSTOMER RELATIONS

Emphasis on dollar SAVINGS



DURKEE ATWOOD V-BELTS

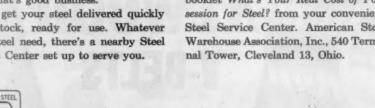


USE OUR CAPITAL to cut your handling and processing costs

When we do a share of the processing of your steel-the cutting, burning-you save the costs of the labor it takes and the capital invested in the equipment involved. You save expensive costs of handling. You cut scrap loss and wastage. That's good business.

You get your steel delivered quickly from stock, ready for use. Whatever your steel need, there's a nearby Steel Service Center set up to serve you.

If you're putting steel in inventory because you think it's a bargain, compare all of your costs of possession with the cost and freedom-from-risk of buying from your Steel Service Center. Use this chart. Or, to be more precise, get the booklet What's Your Real Cost of Possession for Steel? from your convenient Steel Service Center. American Steel Warehouse Association, Inc., 540 Termi-



Equipment Cost of operation: Materials handling Cutting & burning Scrap & wastage Obsolescence Insurance Taxes

FOR STEEL IN YOUR INVENTORY

Per ton delivered

Cost of capital:

Inventory

Space

TOTAL COST OF FREEDOM-FROM-RISK STEEL FROM YOUR STEEL SERVICE CENTER Per ton, cut-to-size, and delivered

TOTAL



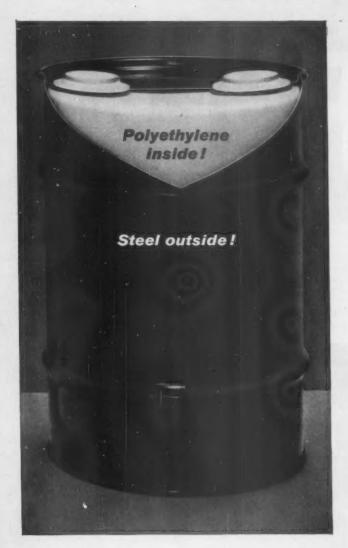
The American Steel Warehouse

..YOUR STEEL SERVICE CENTER

For More Information Write No. 181 on Inquiry Card-Page 32

Now! From GENERAL CHEMICAL...Leader in HF Production

AQUEOUS HF IN NEW, SAFER"DRUM-WITHIN-A-DRUM"



Development of a safer container for Aqueous Hydrofluoric Acid (70% HF) has long been an important objective of chemical packaging specialists. Now General Chemical offers Aqueous HF in a new, safer "drum-within-adrum" which combines the advantages of polyethylene and steel. Developed after more than two years of testing, this drum offers many important features:

Requires no venting! The new drum entirely eliminates venting, since there is no acid-to-steel contact. The all-steel drum presents possibility of danger from hydrogen pressure unless venting is done frequently and regularly.

No corrosion or leakage! One-piece polyethylene construction of inner drum cannot corrode or leak even during long periods of storage. The HF-resistant "poly" drum is fixed firmly inside its steel overpack.

Polyethylene closure seals tightly without "freezing"! Both bung opening and plug are acid-resistant polyethylene. The specially-constructed closure is exceptionally tight, yet simple to operate . . . eliminates "frozen" closures.

Lower tare weight! The new drum is much lighter than the all-steel container. The 30-gallon size, for example, carries 260 pounds of 70% HF with tare weight of only 40 pounds.

General Chemical is the nation's leading producer of hydrofluoric acid. Producing Works are located at Baton Rouge, La.; North Claymont, Del.; and Nitro, W. Va. Additional packaging locations at Buffalo, Chicago, Cleveland, Pittsburgh, and El Segundo (Calif.)

Telephone or write your nearest General Chemical office listed below for further information or service.

Basic Chemicals for American Industry

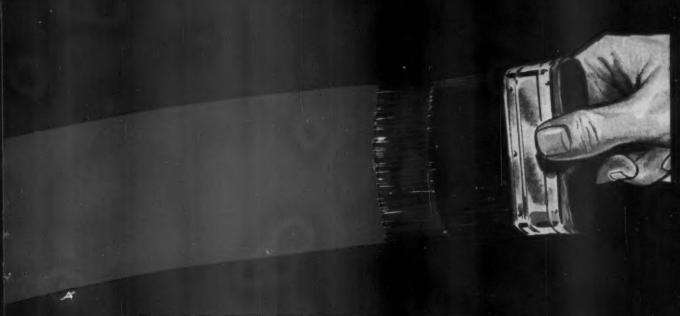


GENERAL CHEMICAL DIVISION

40 Rector Street, New York 6, N. Y.

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Providence * San Francisco * St. Louis * Seattle * Kennewick, Vancouver and Yakima (Wash.)

there's a BARRELED SUNLIGHT paint for every job you name



NAME YOUR NEED!

These are just a few of the many job-engineered paints in the complete Barreled Sunlight Line

Acid and Alkali Resistant Coating — Barreled Sunlight Acid and Alkali Resistant Coating protects against the destructive action of corrosive agents such as acids, alkalies, fumes, gases, water and excessive humidity. Recognized throughout industry for its effective and enduring protection of wood, metal, brick, concrete and other plant construction materials. White and colors.

Aluminum Paints — Barreled Sunlight quick drying Aluminum Finishes provide greatest brilliance, durability and hiding power. Liquid Aluminum, for general inside and outside use, resists temperatures up to 300°F; Heat Resistant Aluminum, for interior and protected exterior surfaces, resists temperatures up to 600°F.

Machinery Enamel — You need a quick drying, high hiding, oil and grease resistant finish for the maintenance of machinery and general equipment. Barreled Sunlight Machinery Enamel has all these, plus outstanding adhesion, toughness and flexibility. Dries to a light-diffusing "modified gloss" which eliminates objectionable glare. All popular machinery colors.

Mildew Resistant Paints — Where high heat and humidity combine to create mildew, mold, or fungus problems, Barreled Sunlight Mildew Resistant Gloss provides the ideal protective coating. Thoroughly field tested under toughest conditions, this specialized white interior finish has excellent whiteness and hiding power.

Rust Inhibitive Coatings — Here's the easy way to "give rust the brush" on all interior and exterior iron and steel. Barreled Sunlight *Chromate-Lead-Oxide Metal Primer* combines the corrosion-inhibitive qualities of zinc chro-

mate, red lead and iron oxide in a durable, weather-resistant synthetic vehicle. For economical protection of exterior metal, specify Barreled Sunlight Rust Inhibitive Primer—pure Iron Oxide in 100% linseed oil.

Heat and fume Resistant Finishes — Where a heavy duty, non-yellowing white paint is required to resist discoloring action caused by a combination of fumes and dry heat. Barreled Sunlight Chemic Enumel offers white paint advantages for ceilings and walls of many plant interiors where no other white paint has yet justified its cost.

Ceiling and Wall Paints — For heavy duty maintenance painting of new or old plant interiors, specify Barreled Sunlight "Super Hiding" Interior Finishes. Intense opacity often permits one-coat repainting under conditions which normally require two coats. Flat, Eggshell, Semi Gloss and Gloss. Non-yellowing Whites plus engineered Wall and Dado Colors.

If you have a paint problem, it will pay you to call in a trained Barreled Sunlight representative for practical recommendations. He will be happy to show you how you can make substantial savings in material and labor over any paint you have ever tried in the past!

To make the best use of paint and color we invite you to take advantage of the Barreled Sunlight "Engineered Color" Survey. At your request — and without obligation — a Barreled Sunlight representative will make a personal survey of your plant and submit recommendations for a complete, practical painting plan. Try this free service now.

FOR A BETTER LOOKING, LONGER LASTING PAINT JOB AT LOWER COST

BARRELED SUNLIGHT PAINT COMPANY 18-K Dudley Street, Providence 1, Rhode Island

Please send me your color chip catalog showing the complete line of Barreled Sunlight Heavy Duty Maintenance Paints.

I want to try your free "Engineered Color" Survey Service. Please have your representative contact me for an appointment.

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Company

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Need COOLER RUNNING MOTORS for your big jobs?



WAGNER Tube Ventilated Motors can solve your problem

For big fans, blowers, pump drives—heavy duty applications where you need large motors with highly effective cooling systems for long life—choose Wagner Tube Ventilated Motors.

These motors have fabricated steel frames that are provided with a series of tubes through which cooling air is forced by an external blower. Internal blowers, one at each end of the rotor, circulate the warm air inside the motor through ducts in the rotor and stator and around the cooling tubes. This effective cooling system holds the operating temperature of the

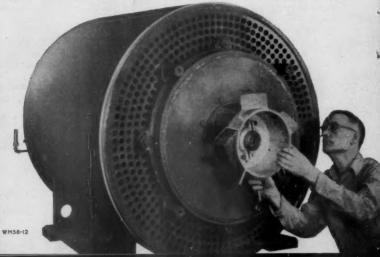
motor within the specified limits of 55° C Rise for Class A or 75° C for Class B insulated motors.

Wagner tube ventilated motors are available as Type YP, standard TEFC, with Class A or Class B insulation; or as Type ZP, explosion-proof, with Class A insulation only. Type ZP motors can be supplied with Underwriters' Labels for Class I, Group C or D, or for Class II, Group E, F or G locations. Let your Wagner Sales Engineer show you how these motors can solve your big motor problems.

WAGNER ELECTRIC CORPORATION . 6360 Plymouth Ave., St. Louis 14, Mo.

This 400 hp tube ventilated motor is being tested on a 1000 hp dynamometer at the Wagner plant. Photo of motor at right, with blower shield removed, shows cooling tubes and external blower.



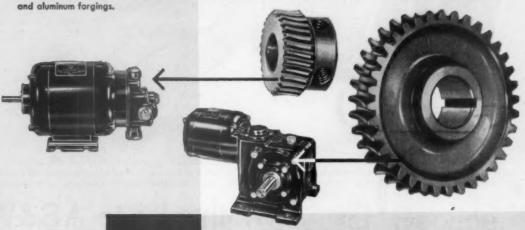


MUELLER BRASS CO. forged gears improve dependability and performance of BODINE electric motors

For combined high shear strength and maximum wear life in their single and double reduction speed reducer motors, Bodine Electric Company of Chicago uses gears forged from Mueller Brass Co. 603 Alloy.

Bodine has specified Mueller Brass Co. forged gear blanks because of their consistently high quality . . . there is no perosity, foreign inclusions or defects typical of cast blanks. The hot working of the metal followed by heat freatment to the desired physical properties produces a refined grain structure to give uniform machining and wear in service. The forged blanks are consistent in size and held to close tolerances. Bodine has also found that the excellent machinability of the blanks in the hobbing operation increases overall hob life.

For forgings of high tensile strength, high density, minimum porosity, light weight, corrosion resistance, good machinability and low costs with little scrap loss, it pays to specify forgings from the Mueller Brass Co., the world's largest producer of brass, bronze



only the man from Mueller Brass Co.

can offer unbiased advice on the "one best way" of producing your parts, because Mueller Brass Co. is the only fabricator in the country offering all these methods of preduction . . . assuring you the best product at the best price . . . made the one best way.



Write today for complete catalogs on any of these products.





SCREW MACHINE PRODUCTS



INJECTION MOLDING



POWDER METAL



COLD-PREST IMPACT EXTRUSIONS



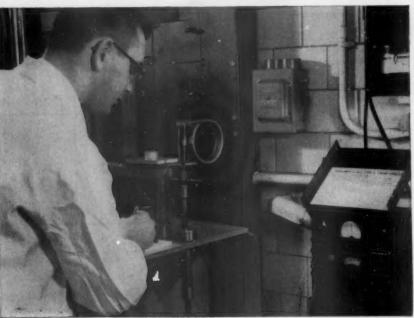
RED BRASS CASTINGS

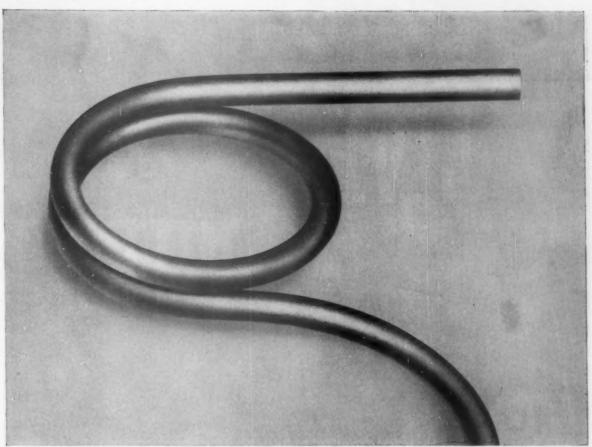
Also producers of: Super Cutting Red Tip Brass Rod · Aluminum Extrusions Aluminum Sheet, Coil and Strip • Plastic Pipe and Fittings • Copper Tube and Solder Type Fittings •

MUELLER BRASS CO. PORT HURON 30, MICHIGAN



In the American Steel & Wire Spring Testing Laboratory, the springs recommended for the Homecrest Chair go through extensive tests. This Fatigue machine, by means of straingauge verification, simulates years of use in a relatively short testing time.





Here is the spring recommended by American Steel & Wire for use in this chair. To supplement the AS&W tests, the Homecrest Company subjected these springs to a simulated rocking test. Under a weight of 250 pounds, these springs were rocked 750,000 times, without failure.

Spring Engineering Research Service

The Homecrest Company, Wadena, Minnesota, wanted to add a swivel rocking chair to their line of modern, functional home furniture. However, they would produce this chair only if it could be a quality item that would give good, dependable service. While designing the chair, they checked with the American Steel & Wire Spring Engineering Consulting Service. The engineers studied the problem, ran extensive tests and finally recommended a pair of round wire helical single coil torsion springs. Using these springs, Homecrest designed, fabricated and marketed the chair. Today 20,000 of these chairs have been sold and not one failure of an AS&W Spring has been reported.

Mr. A. L. Englemann, a partner of Homecrest Company, says, "We have purchased from American Steel & Wire over 45,000 springs, and not one has been reported a

failure. We couldn't be happier with American Steel & Wire as a supply source for our springs."

If you have a spring problem, or would like advice on the use of springs in your product, get in touch with any American Steel & Wire Sales Office. You can benefit from the knowledge of AS&W's Spring Engineering Research Service. The Service has been engaged in laboratory experiments of static and dynamic testing for 20 years and has accumulated invaluable data on stress and fatigue life of steel springs, while endeavoring to improve efficiency in the use of steels, from steel chemistry through product application, to more economically cope with today's rigorous demands. This accumulated knowledge of the AS&W Spring Engineering Research Service is at your disposal.

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American Steel & Wire Division of



United States Steel

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors o Tennessee Coal & Iron Division, Fatrifield, Ala., Southern Distributors e United States Steel Export Company, Distributors Abroad



New design in Sigma hand welding torches

Here is a new, lightweight torch—only 16 ounces—for manually welding light-gage steels. Sigma ST-2 welds in all positions with no change in control or current settings. Welds .030- to .100-in. sheet, using low-voltage shortarc technique with .020- and .030-in. hard-drawn wire. For 200 amp continuous service, a-c or d-c.

Balanced design makes handling easy. Service lines enter through rear of handle—a convenience in cramped quarters. Start-stop switch on handle, easy to reach. Nozzle has a 60° curve for maximum weld visibility.

Sigma ST-2 makes high-quality welds at high speed. Seams require no cleaning . . . dis-

tortion is at a minimum. Inert gas shielding is economical. Low flow rate—only 10 cu. ft. or less per hour—means even more savings.

Call your nearest LINDE office today for a demonstration of this new Sigma ST-2 torch! Or write Dept. PC-II, LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N.Y. Offices in other principal cities. In Canada: Linde Company, Division of Union Carbide Canada Limited.





"Linde" and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

CHEMICAL FIBER

WINDSOR FELTS



... a proven new class of FILTER MEDIA!

Fiber-welded Fabrics Offer High Efficiency Particle Retention

Economical Windsor Felts eliminate the use of secondary dressing materials in many filtering applications!

They're fabricated from selected synthetic fibers to meet your individual specifications...and feature a unique, engineered construction with precision controlled pore size which provides the following significant advantages:

- Rapid filter cake build-up
- Minimum recycle time
- High flow rate
- Dimensional stability
- Ravel free, clean cut edges
- Positive gasketing minimum leakage
- · Easy cake release
- Greater product recovery
- · Lower cost

Windsor Felts are now in use on all types of filtration equipment...inquire how they can improve your operations, write for Data Sheet #18, on company letterhead, please.

Remember: American Felt Company has the most extensive and best equipped staff of product engineers in the Felt industry with engineered materials for seals, wicks, decoration, vibration mounts and polishing... for information, write to...

General Offices and Engineering And Research Laborateries 74 Glenville Road, Glenville, Conn. American Felt Company

Information For Your Catalog Files

MOTOR (MINIATURE)

Four basic models and sizes of a-c hysteresis synchronous and induction motors are described in a 10page catalog. Also covered are 129 spur and planetary gear reductions.

Write No. 1 on Inquiry Card-Page 32

Globe Industries, Inc.

PAINT EMULSIONS

A 30-page technical manual outlines the technology of acrylic latex paints for interior use. Manual gives tables and formulations for each type. Sealers, primers and top coats are covered.

Rohm & Haas Co.

Write No. 2 on Inquiry Card-Page 32

PLASTICS

Facilities for designing and producing any type of injection molded plastic part are described in an illustrated, 12-page bulletin. There is no restriction on complexity of parts made.

Lincoln Molded Plastics, Inc.

Write No. 3 on Inquiry Card-Page 32

POLYVINYL PLASTISOLS

New end uses for a specially formulated polyvinyl dispersion are featured in a 16-page brochure. Case histories cite cost-cutting techniques. Technical data is supplied on stock formulations.

Chemical Products Corp.

Write No. 4 on Inquiry Card-Page 32

REGULATORS (VOLTAGE)

Ratings and outline dimensions are given in Bulletin S358TM for 1 and 5 kva automatic voltage regulators. These tubeless magnetic types are ideal for unattended process applications.

The Superior Electric Co.

Write No. 5 on Inquiry Card-Page 32

RUBBER PRODUCTS

A 72-page catalog deals with industrial rubber products. Brochure describes and illustrates 32 types of hose, 8 types of conveyor belting and 6 types of packing, plastic pipe and couplings.

Acme Rubber Mfg. Co.

Write No. 6 on Inquiry Card-Page 32

SHEET, PLATE METAL

A 16-page, copiously illustrated catalog covers the fabrication of sheet and plate metal products. Items dealt with include standard forms as well as special ones built to order.

Littleford Bros., Inc.

Write No. 7 on Inquiry Card-Page 32

STORAGE BATTERIES

Bulletin No. 210 is a 24-page detailed technical manual on use of stationary storage batteries. Manual provides tabulated data for selection of proper batteries and their maintenance.

The Electric Storage Battery Co.

Write No. 8 on Inquiry Card-Page 32

THERMOCOUPLES (HEAVY DUTY)

Six basic types of wire-type and "Ceramo" thermocouples in all standard gages and calibration are described in a 12-page catalog. Assemblies cover temperatures from -300 F to 2200 F.

Thermo Electric Co., Inc.

Write No. 9 on Inquiry Card-Page 32

THERMOCOUPLES (MINIATURE)

A 28-page catalog deals with a full line of miniature thermocouples. Four basic types are described and illustrated-gasket, bayonet, protecetd and shielded. Their applications are listed.

Therme Electric Co., Inc.

Write No. 10 on Inquiry Card-Page 32

TUBING

Light-wall, as-welded tubing is the subject of a 12page bulletin, No. 60. Tubing made from more than 80 metals are illustrated and described. Tables list minimum and maximum wall thicknesses.

Western Pneumatic Tube Co.

Write No. 11 on Inquiry Card-Page 32

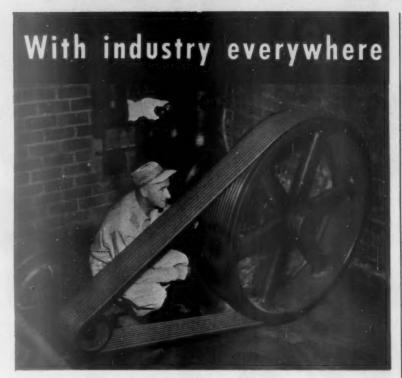
ULTRASONIC CLEANING

The 24-page bulletin, No. S-200 (8\%" x 11" in size) explains practical applications of ultrasonic cleaning. Characteristics of cleaning liquid recommended are discussed.

Branson Ultrasonic Corp.

Write No. 12 on Inquiry Card-Page 32 For More Information Write No. 190 on Inquiry Card—Page 32→ PURCHASING





the No. 1 choice is the V-belt with concave sides

It is easy to see why concave sides insure far longer belt life...and make Gates V-Belts the first choice of industry everywhere.

Just make this simple test: bend a Gates V-Belt as if it were going around a sheave. Feel how the concave sides (Fig. 1) fill out ... become perfectly straight (Fig. 1-A).

Note how this belt thus makes full contact with the sides of a sheave...grips the sheave evenly, distributing wear uniformly across the sides of the belt. Uniform wear lengthens belt life — keeps costs down.

With a straight-sided belt (Fig. 2) the sides bulge out when the belt is bent, and wear is concentrated on the bulge (Fig. 2-A). Uneven wear shortens belt life — increases belt costs.

Because Gates V-Belts with concave sides are so universally preferred, they are also the *most widely available*. There are Gates Distributor stocks in industrial centers throughout the world.

The Gates Rubber Company, Denver, Colorado



For More Information Write No. 191 on Inquiry Card-Page 32

Catalog Files

VALVES

Catalog P & H-58 has 12 colorful pages of information on 212 popular valves. Tables give valve type, pipe size, rating and weights. The tables facilitate quick valve selection.

Cash-Acme P.O.

Write No. 13 on Inquiry Card-Page 32

WIRE ROPE

A highly illustrated 38-page handbook deals with wire rope splicing techniques. Also, grommets, socketing of ferrules and efficiencies of various attachments are covered.

Union Wire Robs Corp.

Write No. 14 on Inquiry Card-Page 32

WIRE (STAINLESS)

Information on the use of stainless steel wire is contained in a 20-page manual. Mechanical properties and corrosion data are supplied. Tables list round wire weights.

Jones & Laughlin Steel Corp.

Write No. 15 on Inquiry Card-Page 32

WORKHOLDERS

U. S. PAT. (ND. 1813698)

A 24-page illustrated catalog lists a complete line of workholders. The devices range from adapters through vises, including angle tables, arbors and chucks. Each is fully illustrated.

De Witt Equipment Corp.

Write No. 16 on Inquiry Card-Page 32

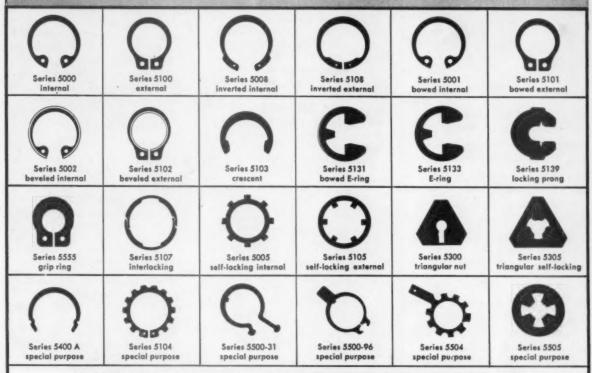
ZINC

A wide variety of fundamental data on zinc is supplied in a 96-page book. Zinc's significant properties and important applications are covered. Photos, charts and graphs supplement text.

American Zinc Institute, Inc.

Write No. 17 on Inquiry Card-Page 32

6 Reasons why Waldes Truarc is your one dependable source for retaining rings



WHATEVER YOU MAKE, THERE'S A WALDES TRUARC RING DESIGNED TO SAVE YOU MATERIAL, MACHINING AND LABOR COSTS

COMPLETE SELECTION—All your retaining ring requirements can be obtained from this one dependable source. Waldes Truarc rings are available in 36 functionally different types... as many as 97 standard sizes within a ring type...5 metal specifications and 14 different finishes.

MANUFACTURING EXPERIENCE—Waldes Truarc pioneered precision retaining rings. Truarc Rings have been standardized by leading U. S. industries and Government agencies. Waldes Kohinoor, Inc. has over 50-years experience in inventing, developing, and manufactusing precision fasteners.

QUALITY CONTROL—Every step in the manufacture of Waldes Truarc rings—from engineering and raw materials through to the finished product—is carefully controlled and tested in our own modern plant. Truarc standards are the highest in the industry—your guarantee of consistent, uniform quality.

DESIGN SERVICE—For help in designing new products or in refining present designs, send your blueprints to Waldes Truarc engineers. Whether your product requires standard or custom-designed rings, these experts are ready to help you. They will also design special assembly jigs and fixtures—or even help you set up an automation assembly operation.

FIELD ENGINEERING SERVICE—More than 30 engineeringminded factory representatives and 700 field men are available to you on call! This engineering service can prove invaluable in helping you to solve design, assembly and production problems.

DISTRIBUTION—Truarc rings are available from leading OEM Distributors in 90 stocking points throughout the United States and Canada.



WALDES

TRUARC

RETAINING RINGS

WALDES KOHINOOR, INC.
LONG ISLAND CITY 1, NEW YORK

WALDES TRUARC Retaining Rings, Grooving Tools, Pliers, Applicators and Dispensers are protected by one or more of the following U. S. Patents: 2,382,948; 2,411,426; 2,411,761; 2,416,852; 2,420,921; 2,428,341; 2,439,785; 2,441,846; 2,455,165; 2,483,379; 2,483,880; 2,483,881; 2,487,802; 2,487,803; 2,491,306; 2,491,310; 2,509,081; 2,544,631; 2,546,616; 2,547,263; 2,558,704; 2,574,034; 2,577,319; 2,595,787, and other U. S. Patents pending. Equal patent protection established in foreign countries.



Five times cheaper than stainless steel. That's what the British dairy industry reports about seamless tinned steel milk cans. It finds that a heavy tin coating gives a good adherent finish, provides excellent corrosion resistance, is completely nontoxic, and does not in any way affect the flavor or the nutritive value of the milk.

*

The increasingly important role of tin in this age of the jet and missile is again confirmed. A tin-zinc alloy is being used to plate jet aircraft hydraulic brake parts and thus prevent corrosion. The alloy is 75% tin and 25% zinc.



Another new product is available in the popular aerosol cans. It is Freon, an odorless, colorless gas normally used as a refrigerating agent. The aerosol Freon bomb will double as your personal, portable tire pump and fire extinguisher. It can be used to inflate the average tire with 22 pounds of pressure in just 6 seconds. It kills fires by depriving the flames of oxygen and lowering the surrounding temperature.



Ask us to send you TIN NEWS, a monthly letter. It will keep you posted on tin supply, prices, new uses and applications.

The Malayan Tin Bureau
Dept. 45L 1028 Connecticut Ave., Washington 6, D.C.
For More Information Write No. 193
on Inquiry Card—Page 32

Letters To The Editor

BUYER'S TRAFFIC GUIDE

Would you please send me a copy of the "Buyer's Traffic Guide" which was shown in your Sept. 15 issue?

Your magazine has been of considerable help to me, being a comparatively new buyer, and I'd like to take this opportunity to thank you for your informative articles.

D. A. Paradise

Technical Products Company Los Angeles, Calif.

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• This is just one of the more than 200 requests Purchasing Magazine received for this traffic guide. As illustrated, the guide is a single page giving general traffic information. It is from a book compiled by a traffic analyst at North American Aviation. The balance of the book is devoted to approved shippers who can handle freight into Columbus, Ohio. While the idea can be adopted for any locality, the specific book as used at North American is only of value if you are bringing freight into Columbus.

DO NOT DESTROY

I look forward to your editorial in every issue of Purchasing Magazine and many of them I cut out and save for some thoughts that I later try to get across to the purchasing agents in our plants or use some of the thoughts in my speeches.

As I know a number of other

men who receive your magazine also cut out the editorial, I have a minor suggestion to make: somewhere on the page include the date of that particular issue.

C. Warner McVicar
Director of Purchasing and
Traffic
Rockwell Manufacturing
Company

Pittsburgh, Penna.

• This excellent suggestion has been adopted. We are more than pleased to be able to do anything we can to make each issue of Purchasing Magazine more beneficial to every reader.

THREE-BARRELED GUN

In the September 29 issue of Purchasing Magazine (page 7) there was an item titled, "Gunning Em Down."

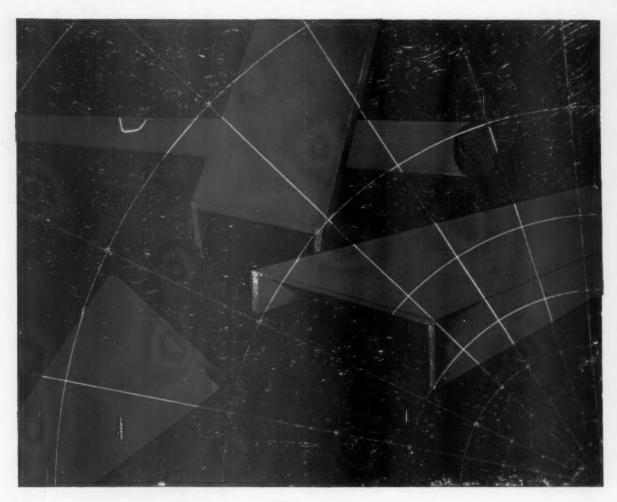
We would like to have the name of the manufacturer of this three-barreled gun.

> Frank Jones Michigan Chrome and Chemical Co. Detroit, Michigan

• This gun, which sprays reinforced plastic was developed by the Rand Development Corporation of Cleveland, Ohio. Rand is a research and development firm that licenses other companies to manufacture the product. We are sure that this organization can give Reader Jones, and any other interested persons, complete information about the gun.

CAN YOU HELP

Would it be possible for you or some Purchasing reader to provide information as to how a purchasing agent can properly evaluate comparable new machinery when replacing an outdated piece of equipment, assuming that the new machinery is all within a specified price range



Use quality USS Stainless Steels ... available at your steel service center

By ordering USS Stainless Steels from a steel service center, you can avoid costly idle inventory and get delivery of the material you want . . . when you want it.

Here's your opportunity to combine the money-saving benefits of a steel service center with the fine, quality-controlled products of United States Steel. USS Stainless Steels are available right now, because of their strategically planned, wide distribution.

Remember, as a part of the American Steel Warehouse Association, your steel service center has been set up specifically to handle your immediate steel demands. So the next time you order stainless from your steel service center, be sure to specify USS Stainless Steel.



United States Steel



TAKE THE GUESSWORK OUT OF MOTOR SELECTION





Speed-Trol Variable Speed Brives



Sin-Speed



Constant Normal Speed Motors



Multi-Mount Speed Reducers

Don't trust to luck when selecting a drive for your machinery. Be sure! A Sterling Application Engineer will help you select a Sterling Electric Power Drive System that produces startling increases in machine performance at lower operating costs.



STERLING

Plants

LOS ANGÉLES 22 · CINCINNATI 12

Offices and Stocks in Principal Cities

For More Information Write No. 195 on Inquiry Card-Page 32

Letters

(\$10,000—\$12,000), and supposedly giving similar capacities and results?

What is the basis of evaluating old machinery that almost appears ready for replacement? How does one evaluate comparable new or comparable used equipment when adding to productive capacity?

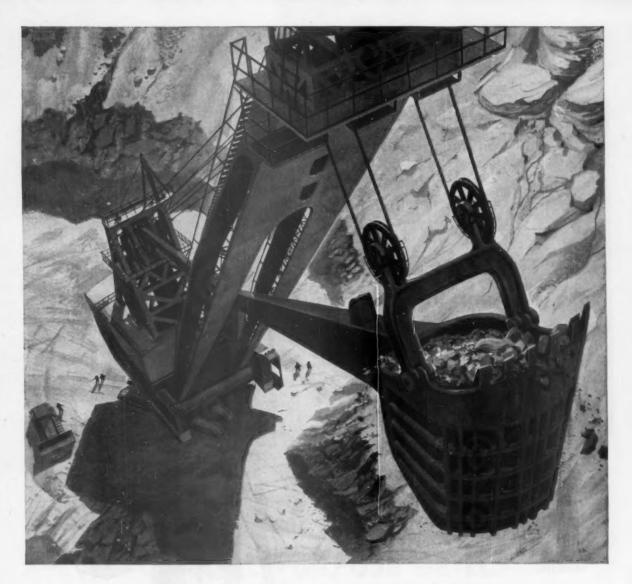
It is my understanding that there is a rule of thumb or basic data to seek on which a decision could be made in such instances. I recently ran into a situation where it was nearly impossible to pick the correct machine except on what could be determined from the ability of the salesman to present his case and talk intelligently; from my own convictions and the salesman's presentation of facts and figures to show that design was superior and disregarding price as final consideration.

It is extremely difficult to pick the right machine even after full consideration of equivalent specifications because there are so many other variable factors.

I would appreciate any information you may be able to supply.

Ralph J. Lodge
Purchasing Agent
James Russell Engineering
Works, Inc.
Boston, Mass,

• The Machinery and Allied Products Institute, 1200 18th Street, N.W., Washington 6, D. C. would probably have the most comprehensive information on this problem. This group recently completed a study called, "The MAPI Formula." With it you can calculate the advantages of replacing machine tools and other equipment. It provides a basis to compare old and new machinery and the relative costs involved. The formula is used to compare a single piece of old equipment with a recommended piece of new equipment. If any readers have solved this problem in their own situations please write to us or, if you prefer, direct to Mr. Lodge.



World's Biggest Eater Dines Without Interruption



You are looking at 3 million dollars' worth of power shovel, a 14-story monster capable of biting off 70 cubic yards of dirt at a clip.

Continuous operation is essential because downtime on a shovel of this size could top 500 dollars an hour. Reliability is shared by many interrelated parts. Some are made of Synthane laminated plastics.

Why Synthane? Because Synthane laminated plastics have the right combination of properties—dielectric strength, mechanical strength, and ease of machining. And Synthane uses only first-quality raw materials, watches every step in the production and fabrication of the laminate,

is deeply concerned about delivery requirements.

Good materials, competent people, excellent tools and workmanship may not guarantee reliability but they're strong assurance of it.

If you are interested in a reliable source of laminated plastics—sheets, rods, tubes, or completely fabricated parts, write for an interesting catalog or call our representative near you.



SYNTHANE CORPORATION, 7 RIVER RD., OAKS, PA.

For More Information Write No. 196 on Inquiry Card-Page 32

Ozone deterioration Continuing stress Gas leakage

Rough handling in use

New National Hypalon O-rings solve these problems; insure a hand-tight gas seal in Victor Torches

As static seals, commercial Buna N O-rings performed satisfactorily in Victor welding torches when the rings were new.

However, ordinary O-rings age fast in welding torches. They receive rough treatment when welders change nozzles; nozzles are often dropped on the ground to lie there until needed again. Severe ozone deterioration is experienced. Continuing stress, although mild, impairs O-ring elasticity. Rings on welding nozzles are sometimes subjected to long shelf life.

National Seal engineers developed a new O-ring compound, National Hypalon L-11, which not only withstands rough handling, ozone deterioration and stress but exhibits many times the shelf life of Buna N compounds previously used. Today, National Hypalon is standard at Victor.

Special compounding to meet unusual conditions is a basic part of National's complete O-ring engineering service - service available from National Field Engineers in major cities nationwide.

NATIONAL SEAL

Division, Federal-Mogul-Bower Bearings, Inc. General Offices: Redwood City, California Plants: Van Wert, Ohio, Redwood City and Downey, California







proves the economy of using CLE FORGE SPECIAL PURPOSE DRILLS

Time after time CLE-FORGE Special Purpose Drills have clearly demonstrated their ability to produce more boles at lower cost, as proved by hundreds of actual tests in customers' plants. Typical records show that CLE-FORGE Special Purpose Drills...

... produce 10 times more holes per grind ... increase production 80%... double the number of holes per grind ... cut cost per hole ... eliminate breakage ... speed production at no increase in tool cost ... average 13,000 more holes per grind.

These are not "special" tools, but are stock drills at regular prices... available for immediate delivery.

For greatest economy, CLE-FORGE Special Purpose Drills can be ordered with tangs (at no extra cost) and used with

CLEVELAND Split Sleeves. Instead of paying for a taper shank on every drill, you get the needed length with a CLEVELAND Split Sleeve—which outlasts many drills.

If you have a problem of high drilling costs, perhaps a CLEVELAND Service Representative can help you solve it with CLE-FORGE Special Purpose Drills. Contact our nearest Stockroom, or...

TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR

for CLEVELAND & Quality Tools . . . prompt delivery from stock

THE CLEVELAND TWIST DRILL CO.

1242 East 49th Street · Cleveland 14, Ohio

Stockrooms: New York 7 • Detroit 2 • Chicago 6 • Dallas 2 • San Francisco 5 • Los Angeles 58

FINEST in bearing performance ...BEST in bearing service YOURS with BCA



For More Information Write No. 199 on Inquiry Card-Page 32

Purchasing People In The News

oseph W. Nicholson, purchasing agent for the city of Milwaukee since 1923, retired on Nov. 1. Mr. Nicholson who was 66 this year also resigned as secretary of the city board of purchases. He has been secretary of that board since May 1919, a post to which he has been reelected annually.

Mr. Nicholson began his purchasing career in 1918 when he became a chief buyer for the city of Milwaukee. Since 1918 he has guided the spending of \$187,672,-049 of city funds for materials, supplies, equipment and incidental services. In 1950 he was awarded the J. Shipman gold medal at the annual convention of the National Association of Purchasing Agents in Cleveland.

And this year at the national convention of National Institute of Governmental Purchasing, Mr. Nicholson received the N.I.G.P. Distinguished Service Award. Not an annual award, this is only the third time in fourteen years that it has been given.

Among his many contributions to the purchasing profession was his organization of the first college credit courses in purchasing at Marquette University. This was one of the first such courses to be given in the country. He was also chairman of a committee of P.A.'s who were responsible for the adoption of a centralized purchasing program for the State of Wisconsin.

Joseph Nicholson was a charter member of the Milwaukee Association of Purchasing Agents. He was elected president of that association in 1924. He has also served as president of the N.A.P.A. in 1938-'39; and the N.I.G.P. in 1948-'49.

Mr. Nicholson will become a part time consultant on purchasing methods for the International Co-operation Administration (ICA) of the state department. He will, however, continue to reside in Milwaukee.

Three promotions in the procurement department have been an-

nounced by the Aeronautical Division of the Minneapolis-Honey-well Regulator Company, Minneapolis, Minn. Ralph C. Johnson has been promoted to purchasing agent in charge of the maintenace, repair, and operating section. Mr. Johnson joined the Aeronautical Division in 1950, and has been assistant purchasing agent in MRO since 1953.

William P. Freligh has been promoted to purchasing agent in charge of the purchased parts section. Mr. Freligh joined the company in 1951, and has been assistant purchasing agent since 1956.

John L. Leppla has been named purchasing agent in charge of the engineering purchasing section. Mr. Leppla joined the company in 1951, and has served as purchase analyst since 1955.

The appointment of Charles E. Panzica as purchasing manager of the research and development division, of The W. L. Maxson



Charles E. Panzica

Corporation, New York, N. Y., has been announced. In his new position Mr. Panzica succeeds E. V. Anderson who was recently appointed development operations manager of Maxson's research and development division. Mr. Panzica was formerly director of purchases for Electro-Tec Corporation and purchasing agent for Barrett Division, Allied Chemical & Dye Corporation.

American Radiator & Standard Sanitary Corporation, New York, N. Y., has named William H. Chaffee director of procurement.



W. H. Chaffee

He succeeds Thomas W. McNeill, who died early this year. Before coming to American-Standard, Mr. Chaffee was with the Philco Corporation for more than twenty years.

Clayton T. Lyons, a systems analyst in the finance division of International Minerals & Chemical Corporation, Skokie, Ill. has



Clayton T. Lyons

been transferred to the company's purchasing department as a purchasing coordinator. Mr. Lyons joined IMC in 1952 as an accountant in the profit planning section of the Phosphate Minerals Division at Bartow, Fla. In 1957 he was transferred to Chicago as systems analyst in the audit and systems department.



If quality is an important element in your assembly operations, it will pay you to see how Southern Screw's Quality and Service has worked wonders for many industries. Southern Screws can do the same for you.

There are no better fasteners than USA-made Southern Screws. Over a billion in stock, available from our warehouses in New York, Chicago, Dallas and Los Angeles . . Let us quote Southern quality screw prices on your requirements. Compare with the cost of conventional screws. Address: Southern Screw Company, P. O. Box 1360, Statesville, N.C.



For More Information Write No. 200 on Inquiry Card—Page 32

FOB-"filosofy of buying"

THE U.S. ARMY Quartermaster Corps has just issued a movie explaining its vigorous quality control program. Title of the new feature: "Peace of Mind Through Quality Control."

Suppose this idea of linking self-adjustment psychology with sound business practice catches on? We can almost see the titles of a whole spate of purchasing books, films, articles, etc.:

"You Can Find Happiness in Invoice Checking":

"Banish Your Fears with Better Inventory Control";

"Value Analysis: Key to a Sane Sex Life":

"Unleash Your Power of Positive Purchasing Thinking";

"The Materials Manager: A Mature Mind in Action."

Tom HUCKINS of Middlesex University swears he saw this sign on the door of Ralph Zilly, director of purchases for Brown:

We Shoot Every Third Salesman The Second One Just Left!

P.A. of a prominent institution suggests aggressive skepticism toward every request for an electric typewriter. Seems the secretary of one of the higher higherups demanded a pastel-colored electric machine she had seen advertised in some consumer magazine. When purchasing mildly questioned the requisition, the higher-up said get it and don't ask questions. Purchasing got it. A year later the P.A. happened to be in the secretary's office long enough to see her do several letters on the electric typewriter. Not once did the gal use the automatic return key on the machine. She returned the carriage by hand, just as she had done for years on a conventional typewriter.

A MEMBER of the North Jersey Association reports seeing the following on the marquee of a drive-in theatre on his way home from an Education Committee meeting the other night:

"HORROR NIGHT! 2 Features
—Attack of the Puppet People
and War of the Colossal Beast.
Free Bottle Warming Service."

That ought to keep the little monsters quiet!

Speaking of the little ones:

a flash just in informs us of the introduction of phosphorescent hoops designed to glow gaily at night. Trade name: Halo Hoops. Now it'll be a lot easier to see whose halos are slipping after dark.

It's Official now. In his greeting to the recent annual conference of the National Institute of Governmental Purchasing President Eisenhower referred to members of the group as purchasing executives.

THE NEW YORK Yankees are not only guilty of monopoly in restraint of competition: they're going in for the ugly practice of reciprocity. The New York Herald-Tribune reports that Yogi Berra and Phil Rizzuto, partners in a New Jersey bowling emporium, have signed a contract for maintenance of the premises. The lucky supplier: a company in which Gil McDougald has an interest.

THERE'S NO LIMIT to the creative ingenuity of a really good supplier. The owner of an auto glass shop in Miami Beach has run afoul of the law for his imaginative efforts to boost sales, increase profits. His technique: hiring boys and young men to stimulate business by breaking car windows. His trainees prowled around the streets with sawed-off .22 rifles and slingshots creating demand, in a manner of speaking.

Y OU'VE HEARD of attempts to soften up purchasing agents' ethics with gifts and entertainment. The latest dodge seems to be sweetening them up. A large candy company in New Yorkpushing its products as Christmas gifts-has circularized thousands of purchasing agents in the metropolitan area. Prominently displayed on the form letter is a personal note from the president inviting the lucky P.A. to return the self-addressed, postage-paid card and get his own personal gift of a "delicious one-pound box of our famous candies -free, without obligation."



"You never get anywhere if you haven't got gumption enough to go back and tell your sales manager you didn't get the order."



Make NEWARK your source of supply for Wire Cloth and Wire Cloth Products. We weave all of our own cloth from which we fabricate parts for our customers...thus insuring both quality of cloth and accuracy of construction.

Newark Wire Cloth is available in all standard widths, all meshes, all commercial metals...the Newark line is a complete line even up to 400 mesh cloth. And if your problem is one of parts design, our engineers will be glad to aid. May we quote on your requirements?

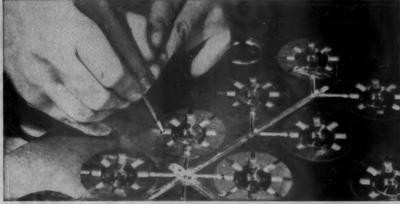


351 VERONA AVENUE

NEWARK 4, NEW JERSEY

For More Information Write No. 201 on Inquiry Card-Page 32

32 ALUNDUM* Abrasive for your tool and die jobs



32 or 44 ALUNDUM Abrasive for your rough grinding



Here's how Norton keeps

"Making better products... to make your products better"

Norton mounted wheels are hitting new highs in grinding efficiency. Outstanding new developments in abrasives and wheel construction eliminate loading and glazing, assuring best possible results in:

TOOL AND DIE GRINDING

Norton mounted wheels with sharp 32 ALUNDUM abrasive and VBE bond are the very best performers.

Advantages: Wheels need no costly dressing; hold form; give constant cutting action — right down to the mandrel.

ROUGH GRINDING

For steel castings and weldments, mounted wheels of tough 44 ALUNDUM abrasive with VBE bond, and metalmounted, are unequalled.

For snagging cast iron, wheels of sharp 32 ALUNDUM abrasive with VBE bond, and metal-mounted, outperform silicon carbide wheels consistently.

Advantages: Norton wheels give you the fastest cutting rate, with a marked increase of stock removed per wheel.

METAL MOUNTING — Another Norton Exclusive — You throw nothing away but the mandrel!



Norton does it again!...The mounted wheels are so securely anchored to the mandrel — you use all of the abra-

sive! No waste . . . all work! This radically improved method of locking the abrasive body to the mandrel is used on mounted wheels in most sizes and shapes, 5/6" diameter and larger. Molten metal, injected into the abrasive recess at high pressure, does it — and does it fine!

Every Norton mounted wheel is accurately trued after mounting on rust-proof stainless steel mandrels. Developed to in-

crease the time-and-money-saving "Touch of Gold," Norton mounted wheels are stocked in approximately 200 standard shapes and sizes.

See your Norton Distributor for prompt deliveries. Or write to NORTON COMPANY, General Offices, Worcester 6, Massachusetts. Plants and distributors around the world.

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries



W.1881

Making better products . . . to make your products better MORTON PRODUCTS Abrasives · Crisding Wackless ·

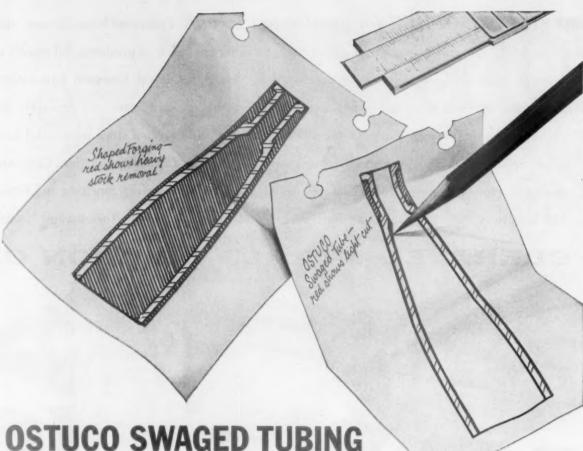
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For More Information Write No. 203 on Inquiry Card—Page 32 ->
Purchasing

Your SINGLE-SOURCE for non-ferrous metals. Federated brass, bronze, aluminum, zinc, lead, solder, babbitts, plating materials, galvanic anodes, lead products. All rigidly controlled in production through processes developed by Asarco's Central Research Laboratory to guarantee complete and strict adherence to specifications, order after order. All promptly available through 21 sales offices, 11 plants, a network of strategically located stock points. All backed by a sales engineer force with long and thorough experience in non-ferrous application. Concentrate all your non-ferrous purchases with Federated Metals Division of American Smelting and Refining Co., 120 Broadway, New York 5. In Canada: Federated Metals Canada, Ltd., Toronto and Montreal.

FEDERATED METALS DIVISION OF





ups aircraft parts production 82%

Hogged out of a shaped forging, this vital aircraft part in SAE 4140 took 400 minutes to machine.

So the producers, The "Special" Corporation, brought their problem to Ohio Seamless. The solution—an Ostuco Swaged Tube.

Now the chips are down . . . and so is machining time. Down to 220 minutes—a saving of 180 minutes per part—with a whopping 82% increase in parts production per workshift.

Chances are Ostuco Tubing can put you on velvet, too. The first step is to contact your nearest Ohio Seamless sales office, or the plant at Shelby, Ohio—Birthplace of the Seamless Steel Tube Industry in America.



Photo: Courtesy The "Special" Corporation, Brooklyn, N. Y.

OHIO SEAMLESS TUBE DIVISION

of Copperweld Steel Company · SHELBY, OHIO

Seamless and Electric Resistance Welded Steel Tubing . Fabricating and Forging

Highlights of This Issue

Economic Order Quantities

Those purchasing people who are in any way acquainted with mathematical formulas for setting economic order quantities may be divided roughly into three types: those who understand and use them; those who more or less accept them on faith but don't use them; and those who are completely baffled by them. Don't be embarrassed if you're in one of the last two categories. You've got a lot of company. But there's no reason why you shouldn't be in the first group. It takes only a reasonable amount of brains and effort to understand the mathematics of EOQ. And the payoff in reduction of inventories and stock-outs is worth it many times over. In this issue we begin an expert's 3-part series on determination of Economic Order Quantities. Start it now on page 69.

Come On 'A My House

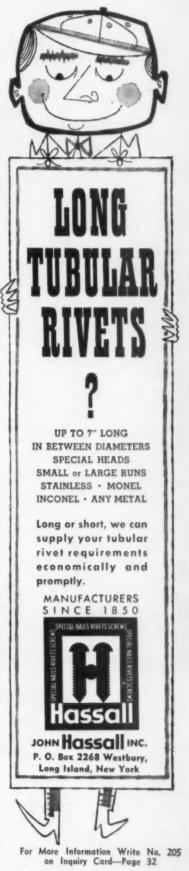
Who ever thought a few years ago that purchasing agents would be figuratively out on the highways and byways trying to drag vendors in to talk to them? That's just about what's happening these days—in a very practical, scientific way, of course. Vendors' seminars, suppliers' days, brain-picking sessions, or whatever you want to call them, are turning up profit-making ideas for purchasing departments of progressive companies Two recent successful meetings of this type are described on page 74.

Airlines Standardize Buying

A few old-timers may remember the efforts to standardize purchase orders, invoices, etc. throughout American industry. The program never really left the ground for a variety of reasons, most of them good. But one industry—with common interests, requirements and suppliers—is off to a flying start with a standardized purchase order system. It's fully automated, fully integrated, and a cooperative effort of both buyers and suppliers. Read about the air transportation industry's new purchasing setup on page 76.

It's The Law

Next to staying out of trouble altogether there's nothing like the advice of a good lawyer when you've got a legal problem. And in your case if that lawyer happens to be a P.A. too you're even better off. For the latest on a buyer's liability under the Robinson Patman Act, see the article on page 86 by Paul H. Johnson, one of our staff of attorney-purchasing agents. Added legal note: look for a new 3-part series on terms and conditions of the purchase order by Lyle Treadway, coming up shortly.



PACKAGED BY GAYLORD YOUR PRODUCT GOES FIRST CLASS

Corrugated boxes by Gaylord deliver positive protection against the hazards of transportation. No matter how your product goes to market—Gaylord corrugated gives assurance that it travels first class . . . and looks the part.

In any language, Gaylord boxes speak for themselves. So call in your G-man today . . . he talks your language.



GAYLORD



HEADQUARTERS, ST. LOUIS PLANTS COAST TO COAST

DIVISION OF Crown Zellerbach Corporation



Jack of All Trades

Purchasing has so many facets, even in the simplest procurement program, that the competent purchasing agent has to have at least a working knowledge of a good many fields in order to make the right decisions. He has to be something of an economist, lawyer, engineer, cost accountant, traffic man, chemist, metallurgist, budgeteer, methods analyst—just to be a good buyer.

Most purchasing agents recognize this, and make a conscientious effort to equip themselves with the necessary understanding of these related areas to enable them to do a good purchasing job. This is highly commendable and has contributed much to raising the standards of industrial buying.

Some go further, to the point of setting themselves up as experts in all fields and building little self-sufficient purchasing empires within the company organization, independent of the counsel of other specialized departments that are better trained to evaluate and advise on questions of technical suitability, economic implications, and legal pitfalls. Unfortunately, such an ambitious attitude is not the logical extension of self-improvement. It is an overreaching of function that is as likely as not to backfire, spreading the purchasing man's talents so thin that his primary job of procurement may actually suffer.

This is an age of specialization. The courts frequently point out that the layman who is his own lawyer usually has a fool for a client. There is good reason why professional engineers must pass tests and be licensed to practice their trade. It is characteristic of successful technical men that they tend to narrow their fields of specialization, "knowing more and more about less and less," rather than scattering their interests. The principle is an old one. The jack of all trades, more often than not, is master of none.

The purchasing man's primary responsibility is to be master of one trade—procurement. A part of this mastery is the knowledge of where to go for information as well as for commodities. It includes the ability and willingness to secure competent counsel from specialists among his company colleagues, or from outside sources if necessary. These are facilities that exist to be used. It is his job, then, to apply that specialized counsel to the value objectives of purchasing.

By this approach, the purchasing man establishes himself as a specialist in his own right, a specialist in procurement and value. And to the same extent he can earn respect and recognition for his specialized function in over-all management and operations.

Stuart F. Henritz

A new problem facing steel users today

The danger of losing money by relaxing inventory controls

When the slump set in last year, big inventories were one of the toughest problems for most companies.

Now, as the economy swings back, these problems may seem to have disappeared. Actually, the problems of inventory cost and risk are always with us—just as much a threat to profit in good times as in bad.

But with the urgency of strict economies reduced, there is a very real danger that many companies will be caught off guard—a danger that recession-born practices will be abandoned as temporary emergency measures without careful enough analysis of their profit potential.

For example, companies that modified their steel inventory policies to avoid long-term commitments found that many costs were reduced and their needs better served. By taking advantage of the stocks offered by steel-service centers, these companies were able to release working capital for more productive purposes, free valuable storage space, reduce handling costs and lower scrap losses, insurance, taxes, etc.

Proof in dollars and cents

Those who carefully weighed all the advantages found reason for a *permanent* modification of their previous buying practices. They proved to themselves that they could and should rely

much more heavily on steel-service centers because it makes sense in dollars and cents.

This conclusion is especially sound when you consider the unusually broad scope of Ryerson stocks and the speed and dependability of Ryerson services. Any kind, shape and size of steel can be shipped to you from Ryerson in a matter of hours. And your steel can be furnished in ready-to-use form, saving time and initial-cutting cost. You gain complete flexibility to meet quick shifts in production schedules. And you have the added assurance of getting steel of uniform, high quality—the unequalled dependability of Ryerson certified quality.

Your Ryerson representative is well qualified to review the facts and help you get the maximum value for your steel buying dollars. Ask him to analyze your requirements with you the next time he calls.

What it costs to carry inventory

IRON AGE magazine says: "A survey of eight plants shows that, for every \$100 worth of materials bought, the average yearly inventorying cost is \$19.37."

Other authorities say the real cost of steel placed in inventory for extended future use may be as high as 40% more than the invoice price.



RYERSON STEEL

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Principal Products: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing—aluminum, industrial plastics, metalworking machinery, etc.

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When Does It Pay to Take A Quantity Discount?

By Spencer B. Smith

To figure it out, you've got to take the cost of carrying inventory into account. Explained here is an easy way to make the necessary calculations and thereby take the guesswork out of buying.

ONE OF the more complex problems facing the purchasing agent is deciding upon order quantities where quantity discounts are involved. By increasing the order quantity to take advantage of a discount, the unit price will be reduced. The number of purchase orders, and hence the costs associated with ordering will also be reduced. However, increasing order quantities will increase the size of the company's inventory investment, adding to the cost of carrying inventory.

Here, then, is the problem: How to determine order quantities in such a way that total costs will be kept to a minimum.

An Example

Consider, for example, the following situation. A company uses 1200 units of an item per year. They may be purchased according to the following price schedule:

Order Quantity	Unit Price
1-499	\$1.00
500-999	\$0.95
1000 and up	\$0.925

The costs which are incurred when an order is placed, such as preparation of the purchase request, preparation of the purchase order, expediting, receiving, receiving inspection, stock put away, and accounting, add up to \$10 per order.

The costs of carrying inventory including space, insurance, inventory taxes, obsolescence, deterioration, and interest on capital amount to 24% of the value of the inventory per year.

Given these facts, how are we to decide on the amount to order? One method would be to select a series of order quantities, calculate the total annual cost associated with each, plot the results on a graph, and select the order quantity yielding the lowest total cost.

The total annual cost for any given order quantity may be calculated in the following way. For illustration, let us take an order quantity of 600 units:

Purchase Cost. Our annual use is 1200 units. A 600 unit order quantity will put us in the \$0.95 unit price range. Therefore, the annual purchase cost will be:

1200 units x \$0.95 = \$1140

Ordering Cost. Using an order quantity of 600 units means that we will place two orders per year. The cost associated with issuing an order is \$10. Therefore, our annual ordering cost will be:

2 orders x \$10 = \$20

Inventory Cost. Assuming that we will be carrying, on the average, half of one order or 300 units in inventory, our average inventory investment will be 300 units x \$0.95 or \$285. Therefore, the inventory carrying cost will be:

 $$285 \times 24\% = 68

Total Annual Cost will then be the sum of

Spencer B. Smith, the author of this series of articles, is well qualified as an expert on inventory management. He holds an ScD from Columbia University where he was formerly a member of the faculty. He is presently employed as a manager of operations research for the Raytheon Manufacturing Co.

This is the first of a series of three articles on purchasing in economic order quantities. The second article will deal with order points and safety stocks; the third with periodic ordering systems. Look for them in succeeding issues.

purchase cost, ordering cost and inventory cost or:

\$1140 + \$20 + \$68 = \$1228

The results of making a series of such calculations are presented graphically in Fig. 1. Here the curves A, B and C represent the total annual costs as functions of order quantity for unit prices of \$1.00, \$0.95 and \$0.925, respectively.

Only the solid portions of the curves are really relevant to our problem. They have been made solid for the range of order quantities in which the unit price used in the calculations is actually in effect. The dotted lines are extensions of the curves to show what the total cost would be in each case if the unit price were effective for all order quantities.

Analyzing the Graph

Let us consider, first, curve A where our unit cost is \$1.00. It drops sharply at the beginning as the number of orders is reduced and the cost of ordering declines. It reaches a minimum between 300 and 400 units and then starts to rise again with increasing inventory costs.

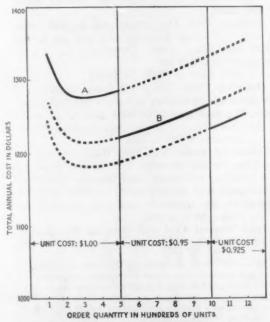


FIG.1 TOTAL ANNUAL COST AS A FUNCTION OF ORDER QUANTITY

The exact order quantity at which the total cost is a minimum for curve A is given by the well-known economic-lot formula:

Economic Order Quantity

$$= \sqrt{\frac{2 \times (\text{Annual Use in Pieces}) \times (\text{Ordering Cost})}{(\text{Unit Cost}) \times (\text{Cost of Carrying Inventory in Percent})}}$$

$$= \sqrt{\frac{2 \times 1200 \times 10}{1.00 \times 0.24}}$$

$$= 333 \text{ units}$$

The total cost at this order quantity is \$1276. If there were no quantity discounts allowed, our choice would be 333 units. As there are quantity discounts, we must see if they will yield a lower total cost than \$1276.

Looking now at curve B, the total cost curve for a \$0.95 unit price, we see that it also passes through its minimum point between order quantities of 300 and 400. However, this is below the 500 to 999 order quantity range at which the \$0.95 price is effective.

Within the 500 to 999 order quantity range we see that curve B rises steadily as the order quantity is increased. Therefore, if we were to select an order quantity in this range we would want to make it as small as possible, that is 500 units. The total annual cost associated with using an order quantity of 500 units is \$1221, a substantial improvement over the \$1276 which would be incurred using order quantities of 333.

It remains to be seen if a further saving can be obtained by increasing the order quantity up to or above the 1000 units price break where the \$0.925 price becomes effective. From curve C, we see that again the minimum total cost point falls below the price break. In the order quantity range of 1000 units and up, the total cost increases with increasing order quantity. Therefore, our best choice in this range would be an order quantity of 1000 units, yielding a total annual cost of \$1233. This is slightly higher than the \$1221 obtained with order quantities of 500.

The conclusion is that the item should be ordered in lots of 500 as in this way the lowest overall cost will be achieved.

Making a Table

Now that we have seen how an order quantity problem with price breaks may be solved, it is still necessary to have a practical, quick method of solution. For this purpose we can use a "Total Annual Cost Table," as shown here in abbreviated form.

The figures in the "Value of Annual Use" column on the left represent the product of annual use in physical units and unit price. Across the top are order quantities in months' supply. Months is an appropriate choice where many items are purchased in relatively small volume per year or purchases are made to support a monthly production schedule. Under other circumstances, order quantities in weeks' or days' supply might be more appropriate.

The figures in the body of the table represent

				TOTAL ANNUAL COSTS (IN DOLLARS)			
VALUE OF ANNUAL USE	1	2	3	ORDER	QUANTITY 5	IN MONTHS'	SUPPLY 7
\$ 100	221	162	143	134	129	126	124
102	223	164	145	136	131	128	126
104	225	166	147	138	133	130	128
106 108	227	168 170	149 151	140	135 137	132 134	131
7.				146		134	
~~			_				
1,050	1,181	1,131	1 100	1 100	1 102	1 122	~~
	1,191	1,141	1,122	1,122	1,127	1,133	1,141
1,060	1,201	1,151	1,142	1,132	1,137	1,144	1,151
1,080	1,211	1,162	1,152	1,153	1,158	1,165	1,173
1,090	1,221	1,172	1,163	1,164	1,169	1,175	1,183
1,100	1,231	1,182	1,173	1,174	1,179	1,186	1,194
1,110	1,241	1,192	1,183	1,184	1,190	1,197	1,205
1,120	1,251	1,202	1,194	1,195	1,200	1,207	1,216
1,130	1,261	1,213	1,204	1,205	1,211	1,218	1,226
1,140	1,271	1,223	1,214	1,216	1,221	1,228	1,237
1,150	1,282	1,233	1,225	1,226	1,232	1,239	1,248
1,160	1,292	1,243	1,235	1,236	1,242	1,250	1,258
1,170	1,302	1,253	1,245	1,247	1,253	1,260	1,269
1,180	1,312	1,264	1,255	1,257	1,263	1,271	1,280
1,190	1,322	1,274	1,266	1,268	1,274	1,281	1,290
1,200	1,332	1,284	1,276	1,278	1,284	1,292	1,301
1,210	1,342	1,294	1,286	1,288	1,295	1,303	1,312
1,220	1,352	1,304	1,297	1,299	1,305	1,313	1,323
1,230	1,362	1,315	1,307	1,309	1,316	1,324	1,333
1,240	1,372	1,325	1,317	1,320	1,326	1,334	1,34
~				~		~	
10.750	20,068	20, 205	20 202	20 570	20.762	20.055	21,15
19,750	20,118	20,205	20,383	20,570	20,762	20,955	
19,800 19,850	20,169	20,256	20,434	20,622	20,814	21,008	21,20
19,900	20,219	20,358	20,537	20,726	20,919	21,114	21,31
19,950	20,270	20,409	20,589	20,778	20,972	21,167	21,36
20,000	20,320	20,460	20,640	20,830	21,024	21,220	21,41

the sum of annual purchase cost, ordering cost and inventory cost which will be incurred by buying the value of goods indicated on the left in order quantities given above. For example, if we buy \$1200 worth of material in two month order quantities, inventory cost and ordering cost will add \$84 to the \$1200 cost of the material for a total annual cost of \$1284. The lowest total annual cost in each line is printed in color.

The calculations required in arriving at the

total annual cost figure are similar to those presented above in arriving at the total annual costs for the graph.

The table shown is based on a \$10 ordering cost, 24% cost of carrying inventory per year, and an average inventory investment of one half of one order quantity.

Now let us see how the table could be used in solving the sample problem we worked through before.

(turn page)

The first step is to determine the values of annual use corresponding to each unit price as follows:

1200 units x \$1.00 — \$1200 1200 units x \$0.95 — \$1140 1200 units x \$0.925 — \$1110

Consider first the possibility of ordering less than 500 units at \$1.00 each. We will look up the line on the table for \$1200 value of annual use. As we use 100 units per month, we will only be concerned with finding the lowest cost order quantity among one, two, three and four month order quantities. Five months would take us into a lower unit price. We can tell immediately that the lowest total cost in this range is \$1276 for a three-month order quantity because it is printed in color.

For the \$0.95 unit price in the 500 to 999 order quantity range we will be concerned with five through nine month order quantities on the \$1140 value of annual use line. On this line the figure in color again falls in the three month column. From economic lot theory we know that the further we get from an economic order quantity, the higher the total cost. Therefore, the smallest order quantity in the range of five through nine months should give us the lowest cost in this case. This, of course, would be a five-month quantity for a total cost of \$1221.

The third possibility lies in ordering 1000 or more units at \$0.925 each. This time we are interested in the total cost figures for 10, 11 and 12 month quantities on the \$1110 line. Again the figure in color is to the left of this range so the minimum total cost will be obtained with the

Harm

Hey, the purchasing department is buying gloves by some high-powered economic order quantity formula. It'll look mighty bad if yours don't show any wear!

smallest of the three order quantities, that is ten months with a total cost of \$1233.

Comparing our three selections, we have three months at \$1276, five months at \$1221 and ten months at \$1233. We would order five months' supply, 500 units, and the total annual cost will be \$1221.

Rules for Using the Table

We can now state a set of rules for using the table in solving problems involving price breaks.

1. Calculate the value of annual use by multiplying the units required per year by the unit price corresponding to one order quantity range.

Determine the largest and smallest number of months' supply within this order quantity range.

3. From the table, determine the order quantity giving minimum total annual cost for the calculated value of annual use and the pertinent range of order quantities in months' supply. If a colored figure is within this range, it indicates the minimum being sought. If the figure in color is outside the range, the minimum will appear at the end of the range closest to the colored figure.

 Repeat for each unit price and corresponding order quantity range.

5. When an order quantity has been selected from each order quantity range, compare them and select that order quantity giving the lowest total annual cost.

The work will be shortened in some cases if a particular sequence is followed in the analysis. Start by determining the lowest total cost associated with the smallest unit price. Then go to the next smallest unit price and so forth. If at any point it is found that the figure in color lies within the order quantity range in which the price is effective, higher unit prices with smaller order quantities do not have to be considered. They will always yield higher total costs.

Other Uses for the Table

In cases where no quantity discounts are available, the lowest total-cost order quantity may be determined directly from the table. Calculate the value of annual use for the item and find the red figure on the corresponding line of the table. The least-cost order quantity in months' supply can then be read at the top of the column.

Another use which may be made of the table is in determining the penalty which will be incurred if other than a least-cost order quantity is used. This may be obtained by subtracting the minimum total cost figure from the total cost figure for the order quantity under consideration.

Note: An extensive mathematical analysis of the problem of order quantities with price breaks may be found in C. W. Churchman, R. L. Ackoff and E. L. Arnoff, Introduction to Operations Research, John Wiley, 1957, pp. 235-254.



Warren L. Price

Purchasing Is Management

Size of this department (one P.A., one buyer, one secretary) has no relation to its importance to the company. Purchasing is part of management in fact as well as in theory.

Some purchasing agents bleat a lot about "management recognition"—and do little or nothing to deserve it.

Some managements pour all kinds of praise on purchasing in public. Then they turn around and keep it out in left field in their own companies.

Some managements and purchasing agents come to a meeting of the minds on recognition and they're both better off for it. One recognizes what good purchasing can do and gives its people a chance to prove themselves. The other performs according to expectations. Result: greater profits for the company, higher status for the P. A.

The situation at Tileston & Hollingsworth Co., Boston, Mass. is a case in point. The company manufactures book and magazine paper, labels, greeting card stock, and various fine papers. It also buys products of other paper makers and resells them as a broker. Its purchasing department is small—a purchasing agent, a buyer, and a secretary. But there's no relation between its physical size and its importance in the company. Purchasing Agent Warren Price:

— is a member of the company's Junior Board of Directors, along with the plant superintendent, assistant to the president, vice-

president in charge of sales and assistant treasurer;

— is a member of the New Equipment Group, along with the president, the mill manager, the vice-president in charge of sales and the treasurer;

 has complete responsibility for all buying with the unreserved backing of top management.

Tileston & Hollingsworth's President Amor Hollingsworth, Jr. is an advocate of "multiple management." In a recent address to the Society for the Advancement of Management at Massachusetts Institute of Technology he outlined the philosophy behind the creation of a Junior Board of Directors. You can't groom people to move into top executive posts, he said, unless you start them early on making management studies and decisions. If you give them free rein in making suggestions to the senior board, you'll broaden their outlook on the whole company. More important, they're bound to work out some improvement in company operations. And that, he added, will lead to more sales and greater profits.

The agenda for any given Junior Directors' meeting cuts across the board. They'll discuss anything from the profit and loss statement to employee insurance coverage to materials handling problems. But the board meeting

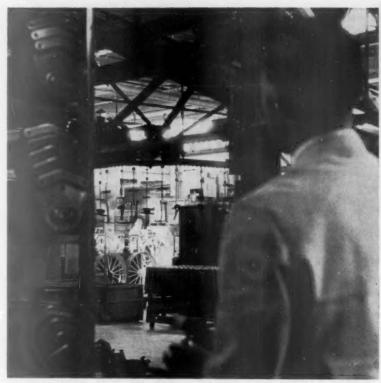
isn't just a management device to let the younger executives blow off steam. They're expected to come up with definite recommendations for changes and improvements—and they do. Some of their suggested projects in which Price was able to make important contributions: changes in salesmen's compensation; changes in sales techniques; new shipping and warehousing arrangements; different methods of forecasting; switch in materials handling techniques.

Price is willing to let others judge the value of the Junior Board's contributions. But he's emphatically convinced that there's no better way to educate a P.A. in his responsibilities and opportunities. "Ten years at a purchasing desk wouldn't give me the education I've gotten serving on the board," he says.

What a P.A. Can Learn

Experience on the board increased Price's knowledge of finance, production and sales. It gave him a broad, over-all view of the company's operations, policies and objectives. And day after day it gives him new insight, new understanding of "the other fellow's" problems and aspirations.

"Within a short time after we (Please turn to page 176)



From inventory to assembly line—a supplier sees his product in action at the Ansul plant.

Seminars Put Suppliers In Their Place . . .

. . . working side-by-side with buyers, design engineers and production people to cut costs and improve product quality. The meetings are paying off with prompt, profitable results.

WE'RE ASKING you to sharpen your wits, not your pencils' was Purchasing Agent Lee O'Leary's greeting to the 19 suppliers visiting Ansul Company's plant.

"We feel that our suppliers should be as close and as understanding as if they were another unit of our department" was the way G.E.'s Purchasing Agent Staff Kellam put it.

Both were acting as hosts at special all-day vendor-customer meetings. Ansul's "Suppliers' Day" was held at the Marinette, Wis. plant. General Electric's "Vendors' Seminar" drew 75 representatives to the Circuit Protective Devices Department at Plainville, Conn. Major goal of both affairs: cost-cutting through better understanding.

Ansul's visitors heard short talks from O'Leary; R. C. Hood, president, and Cliff Vanderwall, manufacturing vice-president. These were followed by a panel discussion on how Ansul products (in this case the new



line of "D" model fire extinguishers) are evolved and the cost factors that are considered.

Following this orientation, the suppliers were taken on an inspection of facilities to see their products in action. Discussion of specific problems between suppliers and individual Ansul personnel were encouraged during this inspection. After a short coffee break three "buzz groups" were formed in separate conference rooms to develop suggestions from suppliers. This was the feedback Ansul was looking for. Suggestions developed by individual groups were discussed in a general session.

Suggestions ran along these general lines:

Avoid close tolerances on oncritical measurement;

Evaluate packaging requirements for our shipments to you;

Have Ansul technical men and buyers visit our firms to see how we manufacture your parts.

G.E.'s seminar followed a similar pattern, with perhaps more emphasis on particular products and their components. After talks on "Financial Aspects of Material Procurement", "CPDD Products and Customer Requirements," "Quality Control of Material Procurement", "Value Analysis," "The Purchasing Function", the visitors broke up into five groups.

Each group went to an assigned display area for discussion with



Merritt Bauman, right, Ansul's manager of product engineering explains features of dry chemical fire extinguisher to visiting vendors.

VENDOR SEMINAR
Circuit Protective Devices Department
September 24, 1958

REQUEST CARD FOR BLUEPRINTS AND INQUIRY

Vendor Name.

Vendor Representative.

Part Number.

Part Name.

Comments:

On-the-spot suggestions began to come from G.E.'s suppliers within a few moments after they examined products "exploded" into their component parts.

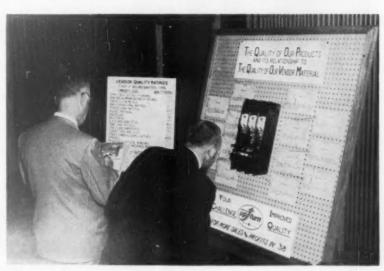


Hundreds of these forms were distributed to vendors—and returned, filled in, to buyers before G.E.'s day-long seminar ended.

a G.E. seminar team on a specific product. At intervals, the groups rotated among the display areas. Special forms for requests for blueprints (see illustration) were provided.

The technique drew an instant and vigorous response from suppliers. At some displays, members of the G.E. team actually had a difficult time keeping up with questions and comments from vendors. Dozens of new and potentially profitable ideas were offered on the spot.

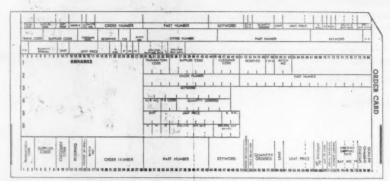
General chairman of the affair was Manager of Materials A. B. Stone. General Manager C. P. Hayes presented a summary of the seminar after eight solid hours of creative cooperation between buyer and supplier.



G.E.'s insistence on quality was brought home with exhibits like these. 40 is top rating in display at left.

The Integrated Order System: Buyers and Sellers Agree On Uniform Procedures

By A. G. Mackey



Quotations and purchase order information is transmitted back-and-forth between buyer and seller on this standard punched-card purchase order form.



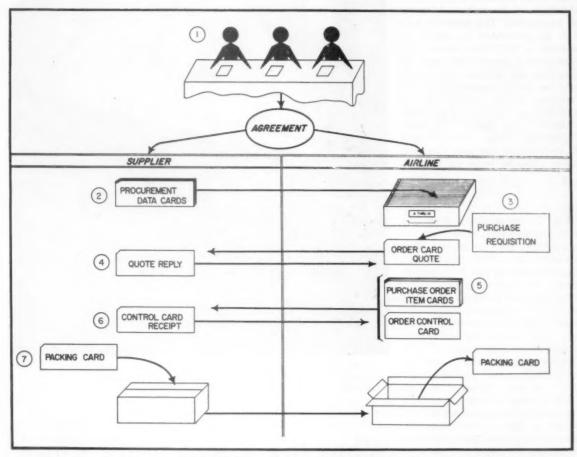
A. G. Mackey, manager—material control, American Airlines, Tulsa, Okla. reviews stocks of spare aircraft cylinder heads with stock clerk L. C. Casey (right).

Purchasing men have long cherished the idea of uniform procedures for both buyers and sellers. The dream is being realized in the air transport industry.

PURCHASING IN the American air transport industry has much to be proud of. It is rapidly progressing toward a goal that is still a dream in most other industries: standardization of all purchasing forms to permit mechanized handling by both buyers and suppliers. All phases of the purchasing cycle—including transmission of information to and from suppliers—may soon be done with punched cards in the airlines industry.

A system of this sort is particularly promising for the airlines since practically all of them deal with a limited number of key suppliers of replacement parts. Recognizing this, the Air Transportation Association Purchasing Committee set up a committee in 1956 to work with suppliers on development of a system of integrated data processing. The system that was evolved is now in trial operation. Here's how it works:

A "procurement data card" is furnished by the supplier for each item procured by the airline. When a quotation is required, the airline originates an "order card," coded as a quotation, and trans-



This flow chart shows how Integrated Data Processing can work on an external basis—between buyer and seller—as well as on an internal basis.

mits it to the supplier. (Where price and delivery are known, the quotation request process is omitted.) The supplier transmits the answer appropriately coded.

The Airline prepares a second order card for each item to be ordered. All order cards to a supplier are batched and sent to the suppliers with a covering control card.

The supplier receipts for all batches of order cards by sending the airline a reproduced control card on which he shows the receipt date.

Flexible System

A supplier may take exception to an order by forwarding an order card properly coded and with the protested data changed to the supplier's version.

The airline can make changes too (including expediting) or cancel an order by sending a revised order card to the supplier, appropriately coded. The supplier can agree or disagree with the change by returning an order card appropriately coded.

Some airlines and some suppliers do not have the required equipment to reach the ideal state. Fortunately, the system permits documents to be hand-written by the airline and used as source documents by the supplier in introducing them into their machine processing system. Suppliers are willing to furnish basic cards for that purpose.

To go to a completely new sys-

tem of such magnitude as that involved in airline procurement and attempt at the same time to design it to integrate with other companies, is an ambitious undertaking.

Any business man can reasonably ask: "what's the payoff?" The answer is improved service and inventory management at reduced costs because of:

Improved communications.

Time span reduction.

Streamlined administration.

Applications to invoicing and billing.

Mr. Mackey is the manager—material control in the Maintenance and Engineering Department of American Airlines at Tulsa, Oklahoma. He represents American Airlines on the Air Transport Association's IDP Subcommittee and is its chairman.

This is the fourteenth in a series of articles on the technical aspects of purchasing. The material that will be presented is meant to provide a "refresher course" for experienced buyers and basic instruction for trainees or buyers new to specific commodities. Mr. DuMond is the author of the well-known book, "Fabricated Materials and Parts" (Reinhold Publishing Corp., New York.) A mechanical engineer, he has spent years in technical writing.

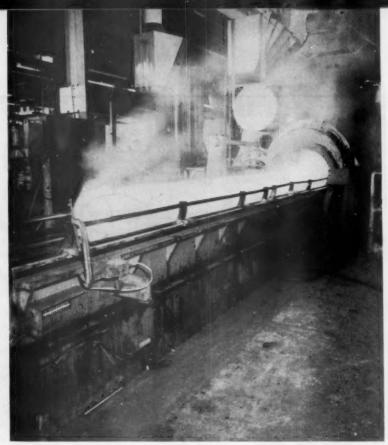
As WITH several other less well known metal forms, impact extrusions have restricted use. However, where they can be used they provide an excellent opportunity for lowering production costs. Size and shape are the most important limitations. Impact extrusions must be concentric in design and cannot be extremely large or extremely small.

Some shapes made in one operation by impact extruding actually combine features of cold press forging and straight extruding. Mechanical properties are excellent in impact extrusions because of the cold work involved in pushing the metal into place.

The method was originally used to produce such products as tooth paste tubes in soft metals such as lead, tin and zinc. Later the method was used to form soft aluminum alloys into parts such as radio tube shields and other simple thin-walled shapes. Now harder and stronger metals are used in impact extrusions for tubing, double-wall cylinders, rocket parts, finned tubing and other special symmetrical shapes with flanges, flutes and other projections.

In many instances two or more parts are combined in a single impact extrusion, as for example a tube with a heavy flange in the center or at one end. Semicircular or U-shaped parts can be made by cutting concentric impact extrusions into two or more pieces.

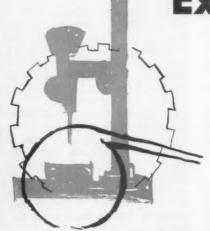
An impact extrusion starts with a slug of ductile metal. The slug is relatively precise as to size and weight to provide exactly enough



A 46-foot length of heavy wall tubing is shown being extruded by a 12,000 ton press at the Metals Processing Division of the Curtiss-Wright Corporation.

What the P.A. Should Know

About Impact
Extrusions



By T. C. DuMond

metal to produce the desired part. The slug is positioned in a die which, in turn, is held in a mechanical press. One blow of the press is sufficient to force the metal to squirt through the narrow opening between a punch and a die. The punch moves with the press and the die remains stationary.

Presses with capacities up to 200,000 pounds per square inch are currently used in making impact extrusions. Because most metals are cold formed their properties are improved substantially due to the considerable reduction in thickness which occurs. In addition there is a forging action on the base which also results in improved strength and uniformity. The forging action permits the fabrication of heavy bases in special shapes.

Actual forming of the part is rapid, but the overall operation is relatively slow because of the time required to load the slugs and unload the finished parts. Average production can be taken as 60 pieces per minute although rates as low as 35 and as high as 70 parts per minute are not unusual.

Almost without exception it is necessary to perform at least one secondary operation on impact extrusions. This might only be trimming the end, or it might include threading, drilling or a minor machining operation.

Cost Factors

Impact extrusions are considered to be in the moderate cost range when compared with parts made by other processes. However, when two or more parts are combined in one extrusion or when extensive machining can be eliminated by changing to parts of this type overall cost reductions can be impressive.

All cost factors which must be weighed in considering impact extrusions are favorable and fall into the low or medium range. For

example:

Die costs are low as compared to those used in making forged or press formed parts. Because of the low die costs, impact extrusions can be justified for relatively low production runs. Low die costs are offset somewhat by the relatively high equipment costs.

Cleaning and finishing costs are low. Parts are clean and smooth as produced. However, it is usually necessary to cut off one end of the impact extrusion to bring it to proper length. A tube open at both ends will require two cutting operations.

Machining, which adds to the costs of parts, is required when dimensional tolerances closer than 0.010 inch are required. Although some threads can be formed on the parts, fine threading must be done in a secondary operation.

Production rates ranging up to 2000 pieces per hour are high as compared to some casting and forging operations but low when matched with die castings, screw machine parts and some stampings.

Labor costs are moderate. Although loading and unloading of presses is usually manual, the workmen need not be highly skilled.

Scrap losses are low. When accurate slugs are provided, the only scrap generated is in trimming the ends of finished parts.

Materials

Although newer techniques permit the use of some stronger metals for impact extrusions, most of them are made of aluminum alloys. Many different aluminum alloys are used, depending upon the type of service anticipated for the part.

Some steels, usually the low carbon types, are now being impact extruded. Experiments with molybdenum, now coming into prominence as an engineering material, indicate it can be formed by impact extruding.

Magnesium is used extensively.

Forming of magnesium is improved by heating slugs to 500 to 700 F before extruding.

Other materials suitable for use with the process are lead, tin, copper, zinc and zirconium.

Advantages and Limitations

Tempered only by the size and shape limitations mentioned earlier, impact extrusions have many favorable features to recommend them. Among their advantages

- (1) Relatively high speed production at a moderate cost per
- (2) Metal properties are good, comparing favorably with forgings. The metal structure is dense and free of porosity.
- (3) Simple shapes need only a trimming operation to complete. When machining is required it is usually a simple task.
- (4) Uniformity of parts is high.
- (5) Surfaces are smooth and clean.
- (6) Scrap losses are low.
- (7) Tooling costs are low.
- (8) Two or more shapes can be combined in one part.
- A recapitulation of limitations shows:
- (1) Shapes are restricted to tubular, symmetrical forms, although fluted or beaded walls and flanges can be incorporated in the shape.
- (2) At least one trimming or machining operation is required on all parts.
- (3) Only ductile metals can be used economically.
- (4) Slugs must be carefully prepared so as to be accurate and clean.
- (5) Sizes are restricted.

Sizes and Tolerances

Sizes of impact extrusions range from a 34-inch minimum diameter upward to 4-inch diameters in relatively hard metals and to 6-inch diameters in softer alloys. Sizes greater than these involve pressures too high for available equipment. At the other extreme, smaller sizes are likely to result in excessive tool damage, particularly punch breakage.

Wall thickness of impact extrusions can be as thin as 0.010 inch in the softer alloy. When harder alloys are being formed, walls are usually at least 0.060 inch thick.

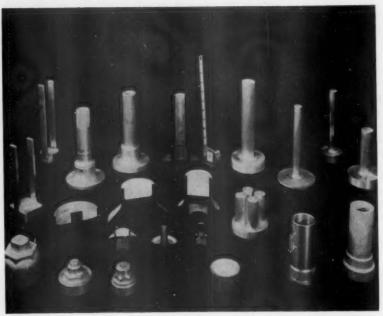
Dimensional tolerances are generally not held closer than 0.010 inch on impact extrusions. Tolerances on lengths are not definite but cause no concern because one end is always cut off and can be done precisely. When closer tolerances are required they are usually attained more economically through machining rather than attempting to make the process more precise.

When to Use

Although any decision to make a part as an impact extrusion must be reached through individual study, there are certain signs which indicate that impact extruding should be considered. For example, if the part is generally tubular and symmetrical it has definite possibilities, particularly if it can be made of aluminum or one of the softer metals.

Should the length of the part exceed its diameter by 1 and ½ to 2 times or more there is further reason to investigate the possibilities of impact extruding granting the previous requirements are met. Impact extruding becomes more practicable if the bottom of the part must include bosses, projections or recesses, or when side walls must have internal or external bosses, beads or fins.

As to quantities required to justify the process, there is considerable latitude, Quantities can range from a few thousand pieces to several million. If the part is difficult or expensive to make by other methods, the lower quantity of parts will justify impact extrusions.



One advantage of the process is its ability to provide special shapes at one end of the part.

All varieties of tubular shapes, including double wall tubing, can be made as impact extrusions.



THE SPREAD of automation brings with it many stern challenges. Among them: the pressing need for more technical information. Paradoxically, this is where purchasing comes in. A trend that's developing—and it's only just beginning to make itself felt—is the emergence of purchasing as a technical information center.

There are a number of reasons for this development. Purchasing is the department that has the most contact with the outside. It serves as the company's eyes and ears to the world. Purchasing is —or should be—the first department to find out about new products, materials and processes. And since purchasing has always served as the company clearing house, it's only natural that it also assume the role of technical information center.

For purchasing departments that are not taking steps to meet the challenge posed by technological advances, the alternatives are these: (1) the responsibility will be forced on purchasing and there will be a wild scurry for the department to establish itself as a technical information center on a crash-program basis; (2) if purchasing is not prepared, the responsibility may be assumed by engineering or some other department. This, of course, would be a blow to purchasing's prestige within the company.

Start Program

One of the trend-setting companies in setting up purchases as a technical information center is Duquesne Light Company, Pittsburgh. The program to make purchasing a technical information center was started four years ago under the guidance of General Purchasing Agent Daniel Nesbit. First step was to bring an engineer into the department. The man was Howard Kerr, Jr., an electrical engineer who came to purchasing from the operations end of the company. His title: Purchasing Engineer.

Kerr's job is varied, interesting, taxing. Basically it involves communications. He's in charge of Duquesne Light's Technical & Catalog Section and has been re-



Make Purchasing a Technical Information Center

It's a new trend, but it's something every purchasing department will eventually have to face. Purchasing will be expected to serve as the company technical information center. Here's how one company is making a start in that direction.

sponsible for setting up a library of vendor catalogs and other basic reference books. In addition, he keeps a file of national specifications which he uses in his work as secretary of the company's standardization committee. One of Kerr's main jobs is to develop new standards for the company. He also edits specifications and is responsible for making certain that stock descriptions on request for quotation forms are accurate.

Another phase of his work involves evaluating specification changes suggested by vendors. It's up to Kerr to decide whether the specification the vendor wants to substitute will be in line with company needs.

Kerr's job hasn't completely shaken down as yet. There's still a lot to be done—particularly in pushing the company's standardization program. But the nucleus of a purchasing department technical information center is there. There's the library of specifications and vendor catalogs. There's Kerr's engineering know-how. (If he doesn't know the answer himself, he does know where to get it.) In addition, there's his vital work as a link between purchasing and engineering on technical problems.

The basic structure of this purchasing information center may change as new demands are made, but Duquesne Light Co.'s purchasing department is at least getting itself in shape for the challenges our increasingly complex technology will make.



FLEXIBILITY is a key word at Flexonics Corporation, Maywood, Illinois. From the era of the gaslight to the era of the satellite, they've been making flexible pressure carriers for a myriad of industries and government services.

Through this period, this medium-size company (annual purchases today approximate \$8 million) has experienced continuous expansion. To grow with it, purchasing has had to be flexible—in personnel and in procedures.

Within five basic groups, the range of expansion products runs from 3/32" to 48" in diameter; in weight, from a few ounces to several thousand pounds. The resulting complexity and diversity of purchases require very close coordination with manufacturing. That's why Purchasing Agent Dick Ferguson reports to the vice president of manufacturing services.

Purchasing for standard industrial items is one problem. For rockets, it's quite another. It means scurrying for raw materials and components tailored to specific customer requirements. One time, Assistant Purchasing Agent Mark Thackaberry had to rustle up 75 pounds of titanium .010" thick and .177"wide. Time limit—one week! To do this you've got to get around.

Diverse experience has given Mark a wide knowledge of engineering requirements. That's true of all Flexonics buyers to some extent. They have come to purchasing from machine design, production planning, sales, systems and accounting.



Flexonics purchasing works closely with engineering to determine requirements for special purchase. Buyer Ray Nykaza, left, checks prepurchase specifications with Chief Design Engineer R. C. Andersen.

Purchasing Is Important In Company Expansion

Successful company growth depends on good purchasing. Here are some ideas that help purchasing keep pace with other departments in an expanding business.

By C. D. Francisco

There's purchasing know-how on the other side, too. A general foreman was a former buyer of raw materials. Now he plugs purchasing understanding in the manufacturing area. That's logical because purchasing gave him experience with all kinds of mate-

rials, and knowledge of the latest manufacturing technologies.

In its eight U. S. plants and one Canadian subsidiary, Flexonics uses many, varied purchasing forms. Some are designed for specific single functions. Others, like inter and intra-plant correspond-



Purchasing Agent R. S. Ferguson (center) and Assistant P. A. Mark Thackaberry (right) compare values on machine parts. Secretary Frances Anderson records "brainstorming" ideas developed.

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A copy of this form in purchasing files eliminates duplication of effort in event of recurring request for quote information from different departments.

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Simple form keeps purchasing records together during inter-plant transfers of manufacturing operations.

ence forms are versatile. Yet all are designed for a single purpose —to save time.

A price requisition form combines information requested and required for sales, engineering or planning. Astutely aware of the importance of purchasing to the overall company effort, these departments constantly ask for information to help give customers the best possible service and quotations.

Each buyer's purchase commitments are stated on a report issued once a month. To the buyer, this is a monthly picture of how much business he's doing. It also gives him a check on raw material consumption, an important consideration in his responsibility for inventory control. Flexible too, because from this same report accounting sets up reserves for accounts payable.

Even the buyers' reports of savings serve as more than black and white proof of good purchasing effort. They're analyzed by P. A. Ferguson and Assistant P. A. Thackaberry. Not infrequently they result in setting up standards. And they're an impressive part of the purchasing agent's annual report to top management.

Occasionally, initial manufacture of an order is started at the Flexonics research and development plant at Elgin, Illinois. In these cases, subsequent manufacturing operations occur at one or more of their other plants. A simply designed form alerts receiving and inspection departments at one plant that purchase order copies should be transferred. This saves confusion, takes only a few seconds for fill-in and provides written authority for action.

As research and development is the basis for any successful corporate expansion, so it is the basis for successful purchasing progress. Research into various value analysis programs has led to a recently formed Value Analysis Committee under the direction of Dick Ferguson. It is composed of members of the purchasing, quality control, production and cost Project studies departments. aimed at cost reduction have already proved their worth.



Abilities, Inc. Purchasing Agent Bill Colson phoning a purchase order to a supplier. About 60% of his orders are telephoned.

BILL COLSON buys about \$750,000 worth of goods a year. Yet he issues written purchase orders for only 40% of his purchases.

How does he do it? Let the hardworking P. A. for Abilities, Inc., Long Island electronic and industrial subcontractor, tell it in his own words.

"We use the telephone for all orders under \$100. We do this because almost everything we buy is on a rush basis. Most of our work is subcontracting and we've got to get it to the prime contractor before his own deadline. So I just call in the order and the material is here practically overnight."

Abilities is a unique manufacturing company in that it is a membership corporation hiring only physically disabled men and women. Everyone at the modern 40,000 sq. ft. plant in Albertson, including president Hank Viscardi, Mr. Colson and Assistant Purchasing Agent Arthur Rose, has some physical disability. Yet the company operates on a strict profit basis—and often outbids and outperforms companies many times its size.

The telephone ordering system was instituted when the company was founded with four employees six years ago. Mr. Colson says, "Since about 60% of our purchases are still under \$100, we've kept the idea and it works just fine."

Another reason Abilities retains the telephone ordering system stems from a cost breakdown Mr. Colson made. "We found that it cost us at least \$2 for each purchase order. We have to issue about 5000 orders a year, so you can see what a big saving we're making."

Requisition Is Master Control

Here's how purchasing functions at Abilities: the requisition—not the purchase order—is the master control. Even for orders that cost more than \$100 and for which a P.O. is issued, the requisition still remains the key. In fact, the requisition number is typed on the purchase order as a double check.

A description of material is filled out on the four-part requisition by the material control department (production items) or one of the shop foremen (MRO supplies). Then the requisition is sent to purchasing, where a vendor is selected, price is negotiated, quantity is determined and the order placed on the phone.

In his phone conversation with

the vendor, Mr. Colson gives the quantity, quality and price of the items he wants. He also tells the salesman the requisition number which should be placed on all shipping orders and invoices.

No Foulups

Purchasing keeps the original of the requisition, as Mr. Colson and his assistant both do their own expediting. One carbon is sent to accounts payable, another to receiving and the third back to the originator.

"Since I've been using this system," Mr. Colson notes, "we've never had any foulups or problems with phone orders. Most of our vendors are in the New York area, they're used to our telephone buying and they never ask for written purchase orders.

"And another thing—if there were to be any mixup because the order was phoned in, the vendor would probably be glad to make good. After all, the order is less than \$100 and our good will is certainly worth more than that."

P. A. Colson, a Korean War veteran, asserts "our telephone system works well because I know a lot of people in most of our vendor companies. Whenever a new salesman gets our account, I ask him for the names of his

For Purchasing Profit

By Leonard Sloans

Here's how one company uses the telephone

instead of written purchase orders to cut costs and save time. The system works for 60% of the purchases the company makes.

sales manager, his production people, his engineers. Then if anything comes up quickly, I can get on the phone with them and rush it through."

Telefax Ordering

For the small percentage of orders placed with companies outside the New York metropolitan area, Mr. Colson uses another speedy order method. He sends his purchase orders to out-oftown vendors via a Western Union Telefax machine, which he keeps close by his desk. Suppliers often have their shipments loaded in freight cars and on the way the same day they receive the telegram.

Mr. Colson believes in utilizing the skills and knowledge of his vendors. "Vendors are authorities on the technical aspects of their products. So we use them for any technical information we might need.

"The way I look at it, the purchasing agent and the vendor's salesman are on a team working together for a common goal," says Mr. Colson. "Every member of a team has to be close, so I try to be close with the salesmen, help them out when I can and receive help from them when I need it.

"But there's one thing we really

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The requisition is the master control, since purchase orders are not used for most orders. Even when P.O.'s are issued, the requisition still remains the key to the transaction.

believe in. You can have a good business relationship with a salesman but you can't be a personal friend. It just doesn't work out."

In order to know more about his vendors, Mr. Colson is building up a vendor classification book. This book, listing his normal supply sources, will cross-reference vendors by plant facilities, quality and special abilities. "When I need a vendor who can do a certain job especially well, all I'll have to do is check the book," he says.

Pointing out one of the special problems of his purchasing operation, Mr. Colson says:

"Purchasing to someone else's specifications is ten times as tough as purchasing to your own. That's the problem of being a subcontractor. Since we never know what we'll have to make the next day, we can't keep a large inventory, but have to rely on our suppliers to get us material on a one or two day lead time. That's why good vendor relations are so essential for us."

When Are Prices Legally Too Low?

Purchasing agents cannot deal in theory regarding the law. They need to know how the law is presently being interpreted. Here's a practical guide for P.A.'s on the price discrimination section of the Robinson-Patman Act.

Paul H. Johnson

HE ROBINSON - PATMAN Act provides in Section 2F, "That it shall be unlawful for any person engaged in commerce, in the course of such commerce, knowingly to induce or receive a discrimination in price which is prohibited by this section." Reading this statute introduces questions in the purchasing agent's mind as to his liabilities under this law, such as:

 When a buyer accepts a price below the published price of the seller is he exposing himself to

legal action?

 Can a buyer demand and receive prices below what his competitors are paying with impunity?

 How can a purchasing agent be certain his purchases are not exposing his company to suit by competitors or by the Federal Trade Commission?

These questions are crucial to a purchasing agent. Unfortunately all of them cannot be answered in a positive manner. The law is not fully developed on this section of the Robinson-Patman Act. But some observation can be made which might help a purchasing agent more fully understand his liabilities under the Act. Consider the following examples:

(1) Ajax Company has a price schedule established with quantity discounts available. It is a published price list with price reductions based on reduced distributing costs on larger shipments. B, a prospective purchaser, knows that his competitor, C, is able to buy only in the 50 to 100 bracket at 10¢ each, whereas B is able to buy in the 100 to 150 bracket at 9¢ each. Is B liable for receiving a discrimination in price if he purchases in the 9¢

No. Since a buyer is entitled to all the defenses of the seller, and the statute provides, "That nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered."

(2) Ajax Company informs B that he is eligible for a 10% discount beyond the published prices in that quantity in which B buys. B, believing that Ajax Company makes the offer available to its other customers, accepts. Actually C, B's chief competitor, was not offered the 10% discount. Is B liable for receiving a price discrimination?

No. The Act requires the buyer to knowingly receive a discrimination in price and since B did not know that his company had been singled out for the preferential price, B would not be lia-

(3) B calls the Ajax Company and informs Ajax that in order to get their business Ajax must sell to B in the 100 to 150 bracket at the list price of 9¢ each less a preferential discount of 30%. Ajax accepts. Is B then liable for receiving a price discrimination?

The answer to this question cannot be given categorically. At this time the only case that has been brought directly against a buyer under Section 2F of the Act is the Automatic Canteen Company of America v. Federal Trade Commission. The Supreme Court in this case said, ". . . . that a buyer is not liable under 2 (f) if the lower prices he induces are either within one of the seller's defenses, such as the cost justification, or not known by him not to be within one of these defenses." In other words, the buyer, to be liable, must know-not merely be aware of the possibility that the price he receives cannot be justified by the seller.

The court further expressed the view that the buyer could not be required to prove that the seller's



A reduced price offered because of a vendor's reduced expenses is not a violation of the Robinson-Patman Act. However, the buyer must make a reasonable effort to determine the validity of claimed reduced expenses.

lower prices were justifiable by a savings in cost, since he (the buyer) did not have the required information and should not be required to obtain it.

What's Buyer Thinking

Justice Douglas, in a dissenting opinion in this case emphasizing the degree to which this decision protects the buyer said, "The court's construction not only requires the commission to show that the price discriminations were not justified, it also makes the commission prove what lay in the buyer's mind."

Under this interpretation then the buyer would not be liable unless he knew the lower prices he received could not be justified by the seller. And, since the buyer does not have access to the records of the seller, he could not know he was receiving an unjustified price discrimination. It would appear in this case that a conviction of a buyer under the Act would be virtually impossible.

In what seems to be a direct contradiction, however, the court further said that "The buyer whom Congress in the main sought to reach was the one who, knowing full well that there was little likelihood of a defense for the seller, nevertheless proceeded to exert pressure for lower prices. ... A buyer who knows that he buys in the same quantities as his competitor and is served in the same manner, or with the same amount of exertion, as the other buyer can fairly be charged with notice that a substantial price differential cannot be justified.

"The commission need only to show or establish its prima facie case, that the buyer knew that the methods by which he was served and quantities were the same as in the case of his competitor. If the methods or quantities differ, the commission must only show that such differences could not give rise to sufficient savings in the cost of manufacture, sale or delivery to justify the price differential, and that the buyer, knowing these were the only differences, should have known that they could not give rise to sufficient cost savings."

Since the case turned on a question of the burden of proof

rather than the question of the buyer's knowledge, the court does not make clear the point at which a buyer can be charged with knowledge of a violation of the Act. How can a buyer be certain of his status regarding the Act? For instance, if a buyer requests a certain price of a seller and the seller responds stating that to offer such a price would be in violation of the Act, must the buyer than scrupulously avoid the purchase, feeling that he has been placed in the position of knowingly violating the Act? Not necessarily. A note by Justice Frankfurter in this case stated:

"The commission may consider that a seller stating that a price would be unlawful might in some situations be puffing rather than stating anything which a buyer can rely on or should be charged with."

Can a buyer protect himself by requesting a seller to swear before the purchase is made that it is justifiable under the Act? On this question Justice Frankfurter stated:

"The commission may in some circumstances wish to refuse to accept a buyer's claim that he relied on an affidavit or other assurances from the seller that price differentials were cost-justified; the furnishing of such an assurance might, together with other circumstances, indicate a sufficient absence of arm's-length bargaining to raise serious doubts as to the weight the assurance should be given in support of a buyer's claim."

As was noted before, this is the only case directly involving an action by the commission against a buyer for violation of Section 2F of the Act. What then are the conclusions which can be drawn from a reading of the statute and the court's decision in the case?

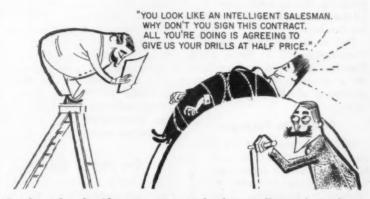
Categorical statements are always difficult to make regarding a field of law as undeveloped as is the law concerning this section of the Act. A new case brought before the Supreme Court with slightly different facts and with a background of changed business and social conditions might result in a diametric approach to the question. A business man cannot deal in theory regarding the law. He needs the best answers available as the law is presently interpreted, so as a practical guide the following statements can be made based on the best information available at this time:

(1) Any purchase made which is based on quantity discounts computed by the seller to reflect his reduced expenses in merchandising larger orders is not a violation of the Act.

(2) Any purchase made in good faith by the buyer believing that the reduced price offered him is a reflection of the vendor's reduced expenses in the sale is not a violation of the Act.

(3) Any price offered by a seller which is so much lower than his standard pricing policy as to raise doubts that the seller cannot justify the price under the conditions of the sale puts the

(Please turn to page 173)



It takes a lot of evidence to support a legal proceeding against a buyer charged with accepting a preferential price. It must be clearly proven that the buyer knew he was receiving a preferential price.



packaging ideas for a transmitter frequency converter.

How to Get Better Packaging From Your Vendors

KARE IS the purchasing agent who hasn't teed off on a supplier for the sloppy way he packs his products. But in most cases that's all the P.A. does-gripe and hope for the best.

Not so at Republic Aviation, Farmingdale, N. Y. Since April, Republic has been pushing hard on a program to improve the packaging of all the products it buys.

Design The Packages

What's unique about the better packaging drive is that it's much more than just a formalized followup campaign to make vendors packaging conscious. Republic actually develops new package designs for the items it buys and then sells its suppliers on the idea of using the new designs.

Republic's packaging program is run by the company's Material Handling Committee (somewhat of a misnomer since the group is almost solely concerned with packaging problems). The committee is made up of representatives from several departments including purchasing, receiving, stores, shipping and quality control. Once a week the group meets to discuss packaging problems.

One Item - \$80,000

Republic's interest in packaging stems largely from the high cost of the items it purchases. Some of the electronic units cost as much as \$80,000 apiece and many of them are quite delicate. Obviously Republic wants to make certain the units are protected as much as possible.

Ideally, the Material Handling Committee wants the kind of package that can be kept on the item through receiving, inspection, lab testing, storage and all the required in-plant handling. In other words a package that doesn't have to be removed until just before the unit is ready to be installed.

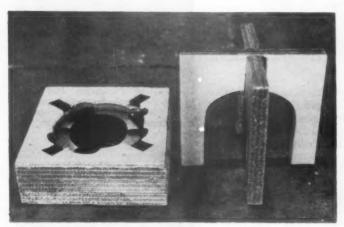
In one particularly successful case, Republic developed a package for an electronic item in which the unit is out of the package for only 21/2 minutes from the time it is received until it is in-



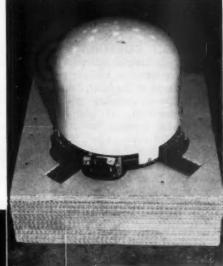
Here's how the converter (shown at left) looks as it arrives from the vendor.



The package was designed so that the converter can be tested and inspected in its container.



Republic convinced its supplier to use this package in shipping radar antennas.



Here's how the antenna fits into the base of the package.

stalled. What makes this a particularly difficult achievement is the fact that the electronic unit has to be inspected and tested.

The job of convincing vendors that they should adopt Republic's packaging suggestions is left up to the buyers. When necessary the buyers give suppliers sample packages, blueprints, pictures and suggested supply sources for the required packaging materials.

So far, Republic buyers have had little trouble getting suppliers to go along with suggested packaging changes. Payoff on the program is that Republic is now getting better, safer and sometimes less expensive packaging for the items it purchases.



The strap which is part of the package makes it easy to remove the radar antenna from its packing case without jarring the unit.

Your Small Orders Are Another P.A.'s Problem

Small orders that can't be filled from stock mean little profit and lots of paperwork for the industrial distributor. Here's how one supply house's purchasing department handles these "cats and dogs" promptly and efficiently.

McJunkin corporation is a unique industrial distributor. It sells basic items in leading gas and oil centers of the East, South and Southwest: tubular goods, stainless products, oil and gas supplies, and general industrial supplies. McJunkin also fabricates special assemblies that feature pipe and fittings.

It's an unusual business and it poses some unusual buying problems. Even with two highly specialized departments - stainless and pipe (which represent over 40% of the business)-McJunkin still has to carry about 55,000 items. It has to welcome and learn to live with the "cats and dogs" of customers' purchasing departments - small orders. Even though the company is in the multi-million dollar sales bracket, its reputation still depends on service; an order for two pounds of grass seed has to be handled as efficiently as one for a hundred tons of pipe. And the service has to be uniform at nine branches in six states.

The (customer's) small order problem is purchasing's baby. When McJunkin receives a purchase order from a customer it might have six or eight different items listed on it. Most of them may be stock items—nuts, bolts, tools—but the last may be some-

what esoteric; a toilet seat, two pounds of grass seed, a door chime. Or it may be a fairly routine industrial item that McJunkin gets little call for and doesn't stock. In any event, it's up to the purchasing department to locate and buy the item and see that it's shipped out promptly.

That phase of distributor purchasing takes a lot of know-how and streamlined paperwork. Without them you could get hopelessly bogged down and actually lose money on every item you handle. (As it is, most of McJunkin's "service" purchases are resold to customers at close to cost.)

The know-how for the job is wrapped up in the long and varied experience of Director of Purchase J. H. "Jim" West. Company executives say, with as much awe as pride, that West is "the greatest supply company P. A. in the business" with a fabulous store of information. Before he came with the company 20 years ago, West was in the industrial supply business in Nashville in various capacities, including selling. The combined experience has given him a great insight into customer needs and an extraordinary knowledge of sources. He is assisted by W. Howard Williams, formerly assistant chief engineer and design engineer. Graves



Director of Purchases Jim West knows the supply business from both sides. He was an industrial distributor salesman before heading up Mc-Junkin's buying.



Purchasing Agent Howard Williams was assistant chief engineer and design engineer before moving into purchasing.



Gnaves Trumbo of the stainless steel div. heads out to do some field expediting. He is president of the Tri-State Purchasing Agents Assn.



SLOW LEAK IN

YOUR BUDGET?

Halt it with new "Rippletex" C-fold towels

Money dribbling away because your paper towels aren't earning their keep? With the new "Rippletex" C-fold towel now available in the famous Nibroc® line, you can switch to Nibroc and save money. Nibroc's perfect balance

of absorbency, strength, softness, reduces waste—cuts costper-user—brings sharp savings in annual towel costs. Nibroc "Rippletex" C-fold towels in brilliant "White Magic" white are embossed for increased softness, greater bulk—better absorbency. They fit any C-fold cabinet. Mail the coupon today for samples and name of nearest distributor.

BROWN COMPANY

General Sales Offices: 150 Causeway St., Boston 14, Mass.
Mills: Berlin and Gorham, New Hampshire



Brown Company 150 Causeway St., Boston 14, Mass.

Please send me samples and complete information on Nibroc "Rippletex" C-fold towels.

NAME_

COMPANY.

STATE

NIBROC TOWELS . NIBROC TISSUE . NIBROC CABINETS . NIBROC WIPERS

For More Information Write No. 208 on Inquiry Card-Page 32

Letter, right, kicked off McJunkin's campaign to solve small order prob-lem. Form at left is used with funds from petty cash in purchase of items costing \$10 or less.

Trumbo and R. S. Wehrle, handle the specialized buying requirements of the stainless and tubular goods divisions, respectively.

McJunkin cut down on the paperwork part of small orders with a system that has been adopted by a number of other supply companies. For a long time, purchasing had been issuing emergency orders for small items ranging in price from 50 cents to several dollars. Accounting would then have to wait for an invoice on each item before re-

charging the customer.

"We woke up to the fact," says Mr. West, "that a big majority of the charges going through accounting didn't stand on their own. There was no profit to them -we were losing, and the people we were buying from were losing because of the paperwork involved. So we switched to paying cash for any purchase of \$10 or

Money for the purchases is obtained from petty cash. The driver picks up a receipt along with the item. The receipt is then attached directly to the charge sheet for McJunkin's customer. When the charge sheet comes up to billing, there's no need to wait for an invoice.

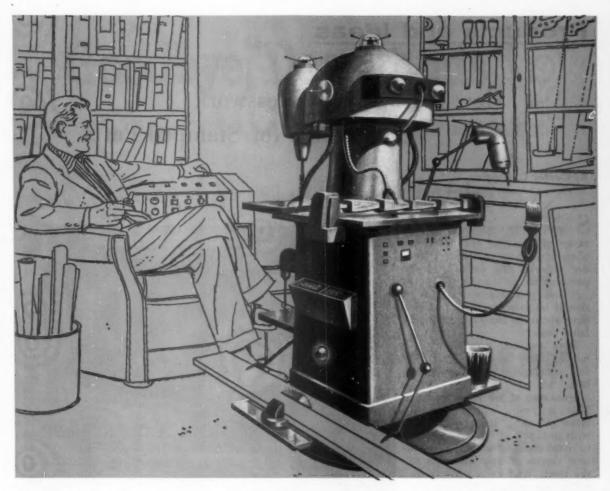
"The wholesalers we deal with have cooperated very well" according to West. "And a lot of them have adopted the system themselves. It's hard to measure specific savings we've had from the system. But we do know we've saved a lot of waiting time, and we know that our sources have eliminated their cost of preparing invoices and waiting for payment."

Purchase of non-stock items by branch managers has been authorized to speed service to customers in their areas. All stock purchases, however, are made from headquarters in Charleston, W.

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	MCJUNK TA	IN CORPORATION

Va. Copies of all orders are forwarded to Charleston, Many major supply sources are located in cities where McJunkin has branches. Purchasing makes good use of the private wire that links all branches in gathering delivery and expediting information.

In a business like McJunkin's, you can't add a new product to your line just because one customer wants it. You'd soon be overwhelmed by inventory. Yet you have to watch demand trends and maintain adequate stocks to meet them. Decisions to take on new products or drop those that show a poor turnover are made by a policy committee made up of company officers. Purchasing is called upon to supply various data on new products under consideration: price, sources of supply, application, etc.



No matter what you make from Cold Rolled Steel

An ALAN WOOD Representative can help!

How about a Home-Carpenter's-Helper? Like to make some for sale? Their design could involve some complicated problems ... not to mention their production. Better call your A.W. Representative for advice. Your A.W. Representative may order a special metallurgical study of your problems and bring about savings that build new profits and greater potential. He can provide you with the latest information on cold rolled steel and its application, plus experienced advice on the gauge, size and type to order. Call him today. Your A.W. Representative is always available...never out of touch with your location.

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"Swede" pig iron

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(high strength
steel)
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Hos rolled strip
Cold rolled strip
Cold rolled strip

ROLLED STEEL FLOOR PLATE A.W. ALGRIP abrasive A.W. Super-Diamond pattern

COAL CHEMICALS

A.W. CUT NAILS Standard & Hardened

MINE PRODUCTS Iron ore concentrates Iron powder Crushed stone

industrial & metallurgical

PENCO METAL PRODUCTS DIVISION Steel cabinets, lockers & shelving

AW

Products and Ideas

How to Take the Guesswork Out of Bids for Stamped Parts

By Carter C. Higgins

President, Worcester Pressed Steel Co.

SURPRISED BY the wide range of bids you get on prints of stamped parts...the high bidder may be fifty to a hundred per cent higher than the low one ... and you wonder why this should be so when those bidding have about the same material and labor costs?

Here are some possible explanations. They can serve as a guide for reducing the spread on such bids.

Ignorance of job requirements. This is probably the greatest cause of out-of-line bids, even with good prints. What is familiar to one stamper may represent new shapes or new materials to the next. And even what is familiar may remind the estimator of a job that gave his shop real trouble: high rejects, extra inspection, dies breaking, etc. An estimator has to really know the requirements, but the purchasing agent must know them, and be able to communicate them. When stampers bid, having full knowledge of what is wanted, spreads of 50-100% can be brought down to around 10%.

Doubt about quantities required. This is a common cause of variations. If an inquiry asks for quotations in lots of 1000 to 50,000, who can tell if this means 1000 a month, or a year, or what. Tooling for the different periods may be completely different. It's good practice to suggest an annual quantity to guide the estimator without necessarily committing your company to such a purchase.

Tool costs vary depending on equipment. Some stampers design fairly complete tools for ease in setup and repair; others combine such as punch ends and die rings



Long a puzzle to P.A.'s is the wide range of bids they get on stamped parts. The big question: why the variation when those bidding have roughly the same material and labor costs?

with standard tools for lower first costs. Progressive operations have to be fitted together and cost more per operation than separate tools. Some stampers quote prices quoted them by tool, plating, painting, or grinding shops; and, of course, these vary considerably.

Use of different operations. Even if your prospective suppliers know what is required, you may find variations in bids because of the different operations employed. Stampers try to differentiate their production from that of their competitors. They build skills and equipment in different fields. There are varying degrees of progressive tooling. Some like short runs, some medium runs, and some long runs. Some may quote to use eyelet presses, four

slides and so on. Machining equipment vary in the degree of finishing. Occasionally, the difference lies as much in the special knowledge of operations as in the equipment itself. You would get a large bid variation, for instance, on really close tolerance work, and on a part with multiple holes punched around its diameter.

Overhead burdens vary. There are strictly streamlined plants doing limited work well at low overhead. There are also plants with wide varieties of equipment, engineering and supervisory costs. The former is better at its kind of work. With the latter, you might pay for abilities a job may not require; however, on another

(Please turn to page 96)

Goodbye, Dead-Ends"!

Westinghouse lamps stay bright from end to end...



"ULTRALUME" phosphors coat the inside of all Westinghouse fluorescent lamps. Only Westinghouse has "Ultralume"...the phosphors that assure maximum brightness for the life of the lamp.

l-o-n-g-e-r!

Banish light-robbing, unsightly "dead-ends" on your fluorescent lamps. Next time, use Westinghouse lamps with exclusive "Ultralume" phosphors and new chrome vanadium alloy leads. The combination of revolutionary new leads and Ultralume phosphors make Westinghouse lamps give maximum light longer and keep them bright end to end!

Save money, too! Lamp for lamp, Westinghouse fluorescents give more light for the same wattage. You get more light per foot . . . more light per dollar!

Specify Westinghouse on every lamp order. Call your local authorized Westinghouse agent or write—Westinghouse Lamp Division, Bloomfield, N. J.

YOU CAN BE SURE ... IF IT'S

Westinghouse WFLUORESCENT LAMPS

For More Information Write No. 210 on Inquiry Card-Page 32

"KEX" Wiping Towel Service used for over ten years by Major Oil Industry in California



SHELL OIL COMPANY





STANDARD OIL COMPANY
OF CALIFORNIA



TIDEWATER OIL COMPANY



UNION OIL COMPANY
OF CALIFORNIA

These companies choose "KEX" Wiping Towel Service because ever-ready "KEX" boosts efficiency. Regular pick-up, regular delivery . . . national service, national quality control are assured.

"KEX" Wiping Towel Rental Service is so flexible that these superior wiping cloths can be supplied as needed, to provide for peaks and lows in production. Obviously, this feature means lower costs in procurement, transportation, storage, and handling charges.



Discover how "KEX" Service can benefit you. These California companies are serviced by Shop Towel Service and Supply, 317 Victory St., South San Francisco, California.



See "Wiping Cloths" or write to "KEX" National Service, 295 Fifth Avenue, New York 16, N. Y.



NATIONAL SERVICE



It isn't "KEX" unless it's imprinted with the "KEX" name.
For More Information Write No. 211 on Inquiry Card—Page 32

Products

(Continued from page 94)

job, you might require the additional skills and knowledge.

Generally speaking, stampers base material estimates on current mill prices, even if lower cost material is available. The low cost material may not be available by the time you place your order. Nesting, and single or double row blanking also account for material variations.

Profit margins vary. This is usually a minor factor in accounting for bid variations. The one exception is when a stamper finds a certain job unattractive and uses a high profit margin.

The human element. It will be some years before estimates are made with Univacs. Until then, the human element will continue to account to some extent for bid variations.

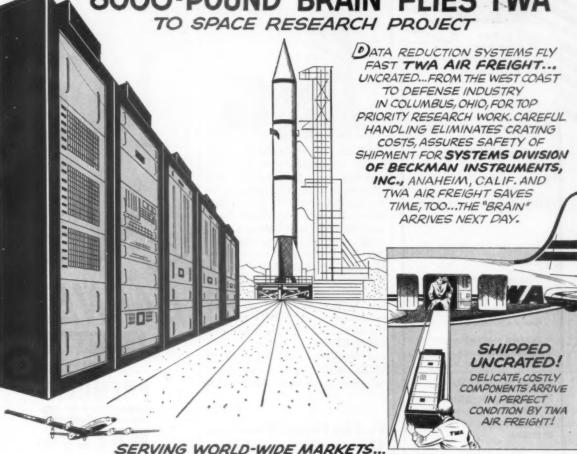
Conclusions. Should purchasing agents cross off the high bidders? Generally speaking, no. It costs money to send prints out to suppliers. And it requires effort to build an understanding with potential suppliers. Also, there's too strong a chance that the next job to come along might be right up their alley, and mutually advantageous. So before scratching the high bidders, it's best to-first, make sure it isn't ignorance of your requirements that keeps a bidder in left field. Second, let him know that his prices have been say 50% out of line, and you wonder if he should spend any more effort estimating your jobs. Such a message at least assures top management attention on your next quote. Finally, visit his plant. This can show you quickly whether he has the equipment and skill for some, or all, of your jobs.

FOR MORE INFORMATION
ON PRODUCTS
IN THIS ISSUE
USE INQUIRY CARD
PAGE 32

ALONG THE WAY ... OF THA







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NEW SUPER SKY MERCHANT SERVES EUROPE

BASTEST AND ONLY DIRECT, ALL-CARGO FLIGHTS BETWEEN NEW YORK AND ROME... SERVING SHANNON, PARIS, GENEVA AND MILAN. THIS GREAT NEW TWA SUPER-H CONSTELLATION IS THE MOST SPACIOUS, LONGEST RANGE ALL-CARGO AIRCRAFT IN THE SKY!

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AND OVERSEAS, BOOK THEM ON TWA JETSTREAM*AND SUPER CONSTELLATION FLIGHTS!

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Engineered Wire for Engineered Products Supported by Complete Factory Stocks

- 1. The toughest film coating of all.
- 2. Best solvent resistance.
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Other Magnet Wires— For Every Requirement

130C (Class B), Polyester— BELDTHERM

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105C (Class A), solderable Cellulose acetate—CELENAMEL*

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180C-130C-105C (Classes H, B, A)— SQUARES & RECTANGULARS

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Magnet Wire • Lead Wire • Power Supply Cards, Card Sets and Portable Card • Aircraft Wires • Electrical Mousehold Cards • Electronic Wires • Welding Cable • Automotive Wire and Cable

01A03I8

For More Information Write No. 213 on Inquiry Card—Page 32

Products

Magnetic Clutches
Make Speed, Feed Changes
On Jig Borer



All speeds and feeds are pushbutton controlled with magnetic clutches on jig borers. The clutches provide these advantages for the jib borer: 1. Elimination of all sliding gears, shifter forks and mechanical linkages that were required on previous machines. All clutches are within the machine, 2. Elimination of all protruding clutch handles. Pushbuttons and selector dials now do the job. 3. Elimination of all bulky mechanisms. Clutches perform the same braking jobs better and faster, I-T-E Circuit Breaker, 19th and Hamilton Sts., Philadelphia 30, Pa., makes the clutches.

Write No. 18 on Inquiry Card-Page 32

Tool Bit Holder Eliminates Circular Form Tool Post For Short Runs



Kwik-Form tool bit holder is designed for fast setups in short runs. With it there is no need for special tools, Simply hand or surface grind form into standard H.S. or carbide tool bit; or even circular grind, using Kwik-Form as a fixture. Screws right onto the

(Please turn to page 100)

FOR LOW COST, TROUBLE-FREE SERVICE



CASTERS

WITH

PHENOLIC (DARNELLOPHEN) WHEELS

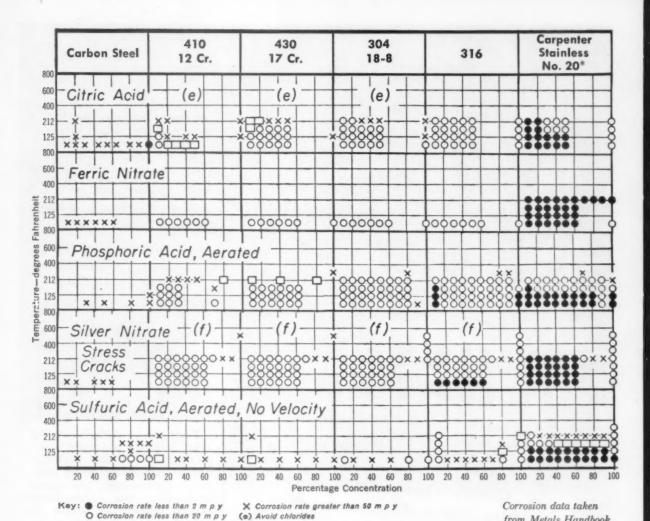
- No rusting or corroding
- Non-marking
- Quieter rolling
- Will stand temperatures up to 200° F.
- High impact strength
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For More Information Write No. 214 on Inquiry Card—Page 32

PURCHASING



The best single answer to most corrosion urpenter Stainless No. 20* problems-

Carpenter Stainless No. 20 is your lowest cost way to control the most severe corrosive conditions. It's available in sheet, plate, bar, forging billets, forgings, tubing and pipe through your local distributor. And Carpenter Stainless No. 20 simplifies inventory problems. You don't need duplicate stocks of other products . . . one stock of Carpenter Stainless No. 20 will put an end to most corrosion problems. Order now from the "House of Corrosion Control". Complete technical data and job performance reports are yours for the asking. Write on your company letterhead to The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

Corrosion rate from 20 to 50 m p y (f) Acid free



available through representatives and distributors in over 40 cities . . . coast to coast

from Metals Handbook



Products

(Continued from page 98)

tool post like a form tool and fits front or rear slides for forward or reverse motion. No longer necessary to remove the circular form tool post when using tool bits on short runs. Supplied in three sizes with either B&S or American Standard Threads by Somma Tool Co., 109 Scott Road, Waterbury, Conn.

Write No. 19 on Inquiry Card-Page 32

Anhydride Curing Agent Allows "All Day" Epoxy Formations



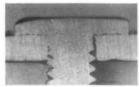
Using an anhydride curing agent achieves an epoxy compound with a higher heat distortion temperature, better electrical characteristics, and easier workability than amine-cured epoxies. Instead of having to make up a fresh batch every fifteen minutes, the production department can use the anhydride-epoxy system for several hours. Anhydride-cured epoxy formulations are ideal for mass production set-ups, where the longer pot-life permits full automation. An experimental arrangement, for example, feeds a full day's supply from a cylindrical reservoir, which has a built-in fan and heater to adjust the viscosity for optimum flow. A foot-controlled needle valve keeps the operator's hands free to manipulate the filling jig, holding each resistor under the valve long enough for complete encapsulation. By using suitable timing and indexing devices, this operation can easily be made semi-or full-automatic. Allied Chemical Corporation, National Aniline Division, 40 Rector Street, New York 6, N. Y.

Write No. 20 on Inquiry Card-Page 32

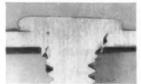


NEW... RIMGUARD controls and guards quality of the weld. Rim construction limits amount of pressure that may be applied during fusion—reduces amount of current required—minimizes burning or discoloration—substantially minimizes "spatter" and "flash".

NEW . . . 4-PROJECTIONS assure proper weld area necessary to develop the full strength of the fastening. $P-K^*$ Rimguard Weld Screws are available with projections on top of head (Type WS-T) or with projections under the head (Type WS-U).



RIMGUARD weld screw—Observe the complete contact of the head of the screw with the work. This is doubly important where work is to be porcelainized or enameled.



ORDINARY weld screw—Since fusion is uncontrolled, weld is not uniform. Note the possibility of corrosion due to moisture condensation in space between head and work.

Ask your P-K Distributor for samples and complete information, or write Parker-Kalon direct.

PARKER-KALON Rimguard weld screws

PARKER-KALON DIVISION, General American Transportation Corporation, Clifton, New Jersey

*Patent Pending.



YOUR STEEL SERVICE CENTER



COLD FINISHED BARS

readily available from your Steel Service Center, help keep your inventory costs down, avoid production delays, and free your capital for more productive uses.

Have you learned the BIG LESSON from the recent recession?

It's expensive to tie up capital and space in steel stocks! When orders fall off, your cost of ownership—interest, space rental, maintenance, and insurance—continues.

This kind of expense for cold finished bars can be eliminated—or at least reduced substantially—by taking planned advantage of the services of your local Steel Service Center, your nearest distributor stocking steel products.

Virtually every steel buyer thinks of his Steel Service Center in an emergency—and this is fine. But even bigger returns may be realized by taking *planned* advantage of your Steel Service Center for your routine purchases.

Your distributor of cold finished bars has a wide variety of shapes, grades and sizes available for prompt delivery, and specialized cut-to-order service takes only a little longer. Plan to use *his* space for your steel stocks, *his* capital for inventory,

his equipment, and his prompt cut-toorder service—and production coordinated deliveries—for higher productive efficiency. Many others already do— American Steel Warehouse Association figures reveal that over 14 million tons of steel were handled in this manner in 1957.

Steel Service Centers are a vital segment of America's steel distribution system, and the distributor nearest you stocking cold finished bars can help you reduce the cost of your steel ownership. Call in his representative and get the full story on taking *planned* advantage of the services of his firm and its facilities. And ask him to show you the new ASWA slide film presentation, "George Wilkins Fights Back"; you'll find it both interesting and rewarding.

Jones & Laughlin Steel Corporation, Dept. 562, Three Gateway Center, Pittsburgh 30, Pennsylvania.



MATERIALS HANDLING EQUIPMENT is expensive—as is the skilled labor to operate it—but you can reduce these costs by taking planned advantage of the services and facilities of your nearest distributor of J&L cold finished bars.

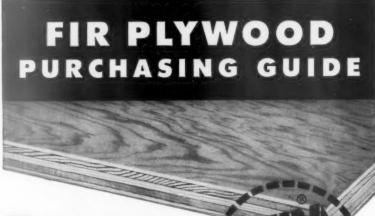


EXACTING QUALITY CONTROL MEASURES assure superior finish, machinability, and uniformity in J&L's cold finished bars. Ask your salesman to show you samples of J&L's improved Bright-Drawn finish, the "new look" in cold drawn bars.



Jones & Laughlin Steel Corporation

PITTSBURGH, PENNSYLVANIA



Insist on DFPA Grade-Trademarks

DFPA grade-trademarks attest quality, performance and value. They appear only on plywood manufactured, inspected and laboratory-tested under the DFPA quality control program to assure conformance to U.S. Commercial Standard quality requirements.



2. Choose the right grade for each job

DFPA quality-tested fir plywood comes in two types: 1. Exterior (waterproof glue for permanent outdoor exposure); 2. Interior (moistureresistant glue) for use indoors, temporary outdoor uses and sheathing. Within each type are appearance grades to meet the exact needs of any given job. Most popular grades are shown below: (other grades including panels made of other western softwoods, also available)

TYPICAL USE	(Waterproof glue)	INTERIOR-TYPE (Moisture-resistant glue) © INTERIOR · A - A · DFPA	
Where appearance of both sides important. Cabinet doors, single thickness walls, etc.	® EXT-DFPA·A-A		
Where only one side will be seen. Siding, paneling, signs, fixtures.	PlyShield® (A-C)	PlyPanel® (A-D)	
Special concrete form grades. Both faces sound, solid, smooth.	Ext. PlyForm® (B-B) Maximum Re-use	Int. PlyForm® (8-8) Multiple Re-use	
Unsanded structural and maintenance panel. Sheathing, crating, temporary screening.	Exterior Glue PlyScord® (C-D)	PlyScord® (C-D)	

SIZES: Standard fir plywood thicknesses are from $\frac{1}{4}$ " through $\frac{3}{4}$ "; standard size is 4' wide, 8' long. Other thicknesses and sizes are also available, including "king-size" scarfed panels up to 30' and 50' long.

TEXTURED FIR PLYWOOD — Fir plywood comes in several smart textured panels for special decorative applications such as siding, paneling, displays and fixtures. These include Texture One-Eleven Exterior plywood (deep parallel grove pattern, shiplapped edges) and panels with attractive brushed, striated, or embossed surfaces.

OVERLAID FIR PLYWOOD — is Exterior fir plywood with resin-fiber overlay permanently fused to one or both sides of panel. High density is hard, glossy, abrasion-resistant (use for long-lasting signs, shelving, concrete forms); Medium density overlaid plywood is smooth, with texture similar to drawing paper (ideal paint base for signs, fixtures, siding).



FREE WALL HANGERS — Handsome 18"x33" wall hanger. Handy fir plywood grade-use-specification guide. Order one for everyone in your firm who specifies fir plywood. Also available, specification portfolio. Includes detailed description all grades, sizes, specialty panels, Commercial Standards requirements. Offer good USA only, Douglas Fir Plywood Assoc., Tacoma 2, Wash., Dept. 185.

For More Information Write No. 219 on Inquiry Card-Page 32

Products

Self-Centering Air Vise



Self-centering air vise holds parts varying in size or shape when the work requires the location of a center or other pre-determined point. Two opposing jaws are actuated directly by diaphragm-type air cylinders on both ends of the vise. Jaw movement is synchronized within a tolerance of .001" by a gear and rack in the base, protected from dirt, chips, and coolant. No pressure is transmitted through the centering mechanism which guarantees uniformity of jaw travel. Features 4" wide jaws, infinitely adjustable to 41/8" opening; maximum travel after setting-2" each jaw-total of 4". Heinrich Tools, Inc., Racine, Wisconsin.

Write No. 21 on Inquiry Card-Page 32

Pneumatic Recording Temperature Control



A pneumatic recording temperature control for industrial applications is designed to utilize a 15-pound air line to actuate an air-operated steam valve or other air-operated device. It is available in any of 10 optional temperature ranges within the extremes of —30 to 1100 degrees F. Features a 10-inch circular chart either electric or spring driven for 24 or 48-hour or 7-day periods. Has a readily adjustable throttling range, 3-20%. Is actuated by a mercury-filled thermal element.

(Please turn to page 106)

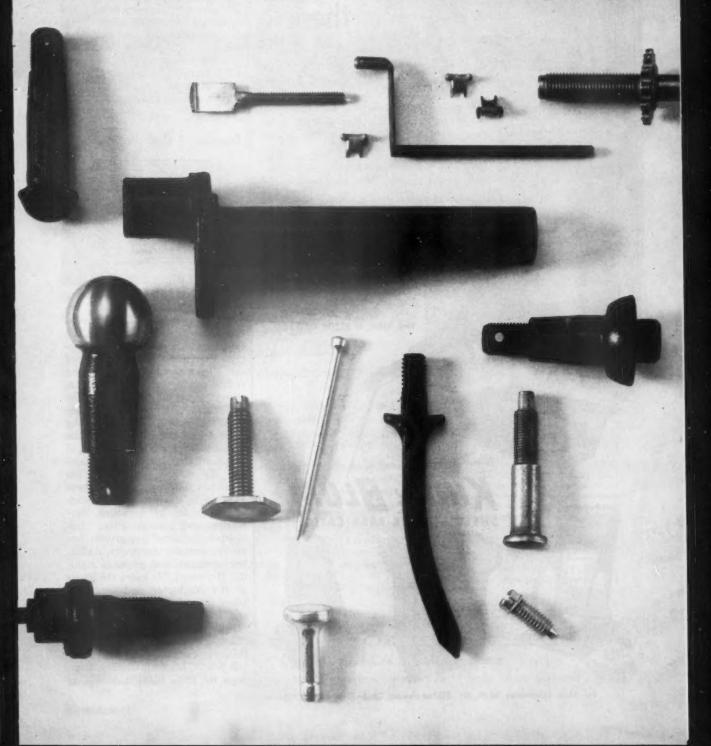
For More Information Write No. 220 on Inquiry Card—Page 32→

PURCHASING

Unusual fasteners are everyday occurrences at Lamson. Some are fairly common; some are not even in existence when we get the order. But we produce each one with the same highly-developed engineering and manufacturing methods that keep costs low and quality at its optimum in Lamson's standard fastener products. Conversely, these same standards benefit from the skill and ingenuity derived in producing special items. These are reasons why you should look to Lamson for leadership in fasteners.

The Lamson & Sessions Co.

5000 Tiedeman Road, Cleveland 9, Ohio . Plants at Cleveland and Kent, Ohio . Chicago . Birmingham





For More Information Write No. 221 on Inquiry Card-Page 32

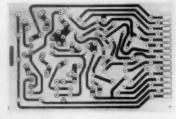
Products

(Continued from page 104)

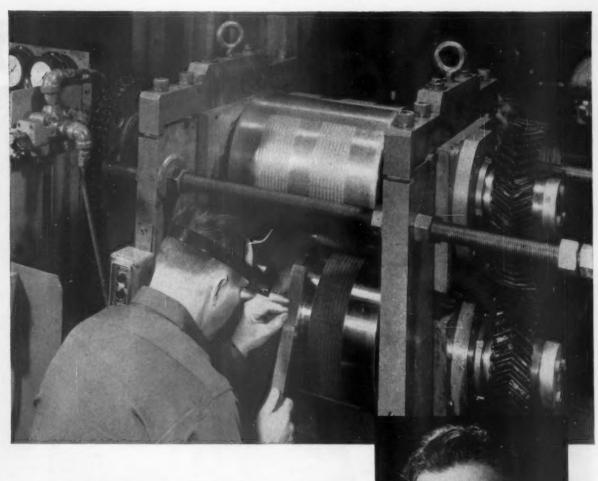
The control varies the air pressure between the control and the air-operated valve in direct proportion to temperature changes. A rise in temperature at the point being controlled is sensed by the control which modulates the air pressure to the air-operated valve or device. Depending upon the degree to which the heat has risen, the valve will restrict the supply of heating medium. Partlow Corp., 508 Champion Road, New Hartford, N. Y.

Write No. 22 on Inquiry Card-Page 32

Insulated Printed Circuits



Imbedded in the base material and protected by an insulating cover, "Imbedded Circuitry" offers high reliability. Using a conductor of three to six times the thickness of ordinary "surfacetype" circuitry, and because of the slight tapered shape of the etched conductor, "Imbedded Circuitry" is actually locked-in-place and will not lift, peel, or separate from the base material under the most severe conditions. Even the direct heat of a soldering iron, if reasonably applied, will not damage the circuit. With only the terminals and/or contact areas exposed to the surface, eliminating problems of moisture, corrossion, and contamination. "Imbedded Circuitry" has greatly improved surface resistivity, dielectric strength, and physical rigidity. If desired, the extra thickness of the conductor and terminals allow them to be made narrower and be placed closer togetherresulting in a highly effective, yet reliable, miniaturization. Midwest Business Service, 8526 11th Avenue South, Minneapolis 20, Minn. Write No. 23 on Inquiry Card-Page 32



"Quality perfection is our business
—Standard Steel helps us
maintain it—and more"

Alclyde Engraving is in a fascinating business. Chances are the dashboard trim, instrument panels, and scuff plates on your car were embossed on Alclyde rolls—this firm manufactures the major part of all rotary register embossing rolls used by the automotive industry.

The packaging, labeling and plastics industries are also heavy users of Standard-forged, Alclyde-engraved rolls. And in all fields in which design changes are a frequent and vital competitive factor, Alclyde must deliver perfection in a hurry.

That's why we at Standard have geared ourselves to give Alclyde the quality perfection and service it requires. In fact, it's the *service* we can give that all of our customers particularly appreciate. Won't you discuss your quality *and* service requirements with us? Write Dept, 5-L.

"Yes, Standard Steel Works, in supplying us with matched, flame-hardened forged steel embossing rolls, meets our rigid specifications for steel analysis and accurate machining. Nothing is more vital to an engraver than to have perfection all along the line-But in addition, we appreciate the warm, personal relationship which exists between us. The people at Standard appear to be really interested in our business and problems," says Frank W. Broderick, president Alclyde Engraving Co., Chatham, N. J.

Standard Steel Works Division

BALDWIN · LIMA · HAMILTON

BURNHAM, PENNSYLVANIA

Rings . Shafts . Car wheels . Gear blanks . Flanges . Special shapes



Yale introduces 2 short trucks



Gasoline Yale G5 Series—Only Series of its Kind to Feature Rugged Design and Fast Cycle Operations.

For heavy industry. • Instant power for fast acceleration from fully automatic torque converter transmission with 2 speed ranges. • Lifting speeds up to 60 ft. per minute.

Turning radius, only 112"—permits easy movement in and out of box cars.
 Operator positioned for excellent visibility.
 Powerful V-8 industrial engine.
 High underclearance.
 For use with forks, single ram, hydraulic split ram or specialized attachments.
 Available for use with LP-gas.
 Capacities: 15,000 to 20,000 lbs.

Both guarantee

Both economical new Yale Trucks—gas and electric—feature famous Yale Integrated Design and premium engineering advances as standard components. You get extra rugged channel assembly—Yale Planetary Drive Axle assembly—hydraulic wheel brakes—tough steel frame construction. For full information about these and other Yale gas, LP-gas, electric, hand trucks, industrial tractor shovels, hand and electric hoists—write The Yale & Towne Mfg. Co., Materials Handling Division, Philadelphia 15, Pa., Dept. A-2511.

that handle up to 20,000 pounds

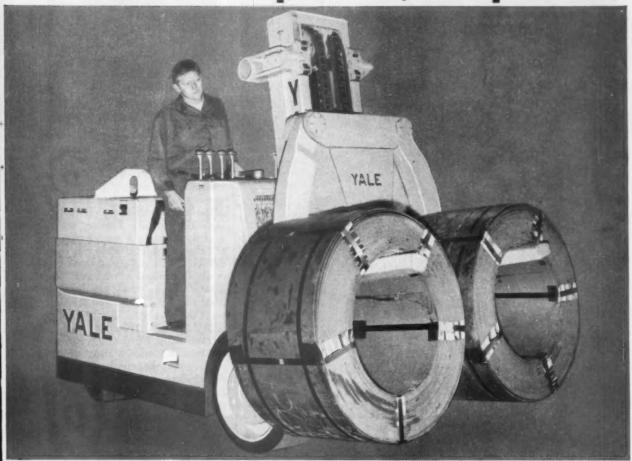


Figure 1. Figure

Easy to maneuver in and out of box cars. • Operator has choice of two stations for excellent visibility at all times. • Hydraulic tilt to safety nest-loads speeds handling operations. • For use with forks, single ram, hydraulic split ram or specialized attachments. • Available with engine-generator power unit. • Capacities: 12,000 to 20,000 lbs.

faster cycle operations

YALE*

INDUSTRIAL LIFT TRUCKS & TRACTOR SHOVELS · HOISTS

YALE & TOWNE

GASOLINE, ELECTRIC, DIESEL & LP-GAS INDUSTRIAL LIFT TRUCKS . WORKSAVERS WAREHOUSERS . HAND TRUCKS . INDUSTRIAL TRACTOR SHOVELS . HAND AND ELECTRIC HOISTS

YALE MATERIALS HANDLING DIVISION. THE YALE & TOWNE MANUFACTURING CO. MANUFACTURING PLANTS: PHILADELPHIA, PA.; SAN LEANDRO, CALIF.; FORREST CITY, ARK.

For More Information Write No. 223 on Inquiry Card-Page 32



reduce machining time save critical materials assure dependable uniformity



WRITE for bulletin describing Edgewater Rings

SECURITY pretty well sums up the reasons why ring users specify EDGEWATER. High quality means security in the application. Accurate forming to close tolerances provides security from excessive machining costs. Prompt deliveries of a wide variety of ring sections and sizes spells security from expensive delays.



For More Information Write No. 224 on Inquiry Card-Page 32

Products

Shear Tester Device



A new shear tester measures vield stress, which may then be used to determine new correlation parameters. Yield stress is measured by simply placing the shear tester on the surface of a stock sample and slowly rotating the handle. Torque transmitted through a spring causes the dish to rotate, which in turn causes elastic deformation of the stock. Continued advances of the handle increase the scale reading until the vield stress value of the stock is reached. This value is read directly from a clearly marked scale. Further advance of the handle causes a drop in the reading as the stock "fails" in shear. Fischer & Porter Co., 824 Jacksonville Road, Hatboro, Pa. Write No. 24 on Inquiry Card-Page 32

Tool Enables Drilling Of Blind Holes



A new tool "sees" through metal and enables an operator to locate hidden parts and drill blind holes. It is available from the Zephyr Manufacturing Co., Inc., Inglewood, California. A sensing tube in a jewel-mounted pointer of the Blindriller seeks out a magnet inserted in a hole in the opposite side of the metal. The pointer zeroes in on the magnet, and the hole. A slide on the Blindriller is shifted to bring a

(Please turn to page 112)



Standard microsize UNBRAKO socket cap and set screws, #0 through #3, are supplied by your authorized industrial distributor in heat-treated alloy or stainless steel. Available with Nylok* self-locking feature.

Standard Microsize UNBRAKO Socket Screws Reduce Costs of Fastening Small Assemblies

Microsize Unbrako socket cap and set screws save both time and money in the design and assembly of your small devices. Precision manufactured, available locally, they eliminate the cost and delay of designing or procuring special screws to fasten tiny components. Use them in computers, servomechanisms, instruments, miniaturized electrical and electronic equipment—countless small, intricate devices where reduction in weight and bulk is required without sacrificing strength or reliability.

These miniature socket screws have all the advantages of larger Unbrakos. Deep, accurate sockets for non-slip, high-torque wrenching. Radii in socket corners to eliminate sharp angles where cracks start. Fully formed threads for greater strength and precision fit. Controlled fillets under cap screw heads to prevent shearing. Careful heat treat for maximum tensile values without brittleness or decarburization. Because of these features, microsize Unbrako socket cap screws are as much as 80% stronger than ordinary miniature cap screws, and microsize Unbrako socket set screws can be torqued tighter than ordinary miniature set screws. This extra strength means greater reliability in the fastening of your small assemblies.

For more information, see your authorized SPS distributor. He carries microsize Unbrakos in both alloy steel and stainless in sizes #0, #1, #2 and #3. Or write us for Bulletin 2055 and samples. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

*T.M. Reg. U.S. Pat. Off., The Nylok Corporation

We also manufacture precision titanium fasteners write for free booklet



Jenkintown · Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co. • National Machine Products Co. • Nutr-Shel Co. • SPS Western • Standco Canada Ltd. • Unbrako Socket Screw Co., Ltd.



HEAT-TREATED ALLOY STEEL Microsize UNBRAKO Secket Cap Scrows Class 3A Threads

Diameter	Threads per inch			Longth	Recommended Installation Torque in Inch-Pounts NC NF		Weight per 1800 in Pounds
FEE	A .096		80	1/6		2.0	.21
#0	₿ .060		80	3/16		2.0	.22
	D .060		80	1/4		2.0	.26
	F .050		80	3/6		2.0	.33
#1	A .118	-	72	1/6		3.5	.31
	B .073		72	3/16		3.5	.36
	D .073		72	1/4		3.5	.42
	F .050		72	3/6		3.5	.53
#2	A .140	56		3/16	6.0		.54
	B .086	56		1/4	6.0		.61
	D .086	56		3/4	6.0		.76
	F 1/16	56		1/2	6.0		.91
#3	A .161	48	1-1-1	3/16	8.5		.77
	B .099	48		1/4	8.5		.87
	D .099	48		3/6	8.5		1.07
	F 564	48		1/2	8.5		1.27



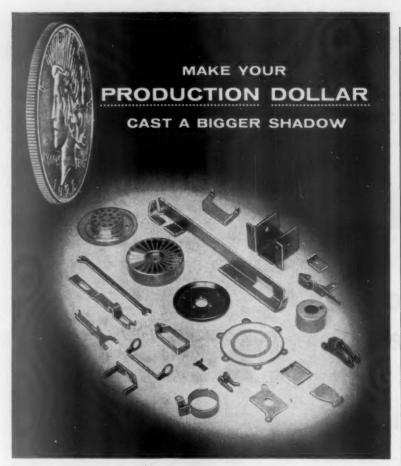
HEAT-TREATED ALLOY STEEL Microsize UNBRAKO Socket Set Screen Class 3A Threads—Plain Cup Point

Diameter		Titra por I	ods och MF	Longth	Received Install Torque Inch-P	ntina	Weight per 1900 in Posses
3 6		1000	80	1/16	WATE:	.5	.03
#0			80	3/10		.5	.04
	D .060		80	1/4		.5	.05
	F .028		80	5/12		.5	.06
			80	3/16	per se	.5	.08
			80	1/4	100	.5	.11
#1	1000		72	1/16	1200	1.5	.04
			72	3/12		1.5	.06
	D .073		72	1/8		1.5	.08
	F .035		72	5/12		1.5	.11
			72	3/16		1.5	.13
			72	1/4		1.5	.19
#2	and the state	56	191	1/14 -	1.5		.05
		56		3/32	1.5		.07
	D .086	56		1/4	1.5		.107
	F .035	56		5/22	1.5		.15
		56		3/16	1.5		.19
		56		1/4	1.5		.273
*3	D .099 F .050	48	1	3/12	5.0		.10
		48		3/6	5.0		.135
		48		3/12	5.0		.10
		48		3/16	5.0		.235
		43		1/4	5.0		.32

HIGH RELIABILITY

SPS research is continually developing fasteners with higher and higher standards of predictable performance. By installing SPS high-reliability fasteners in your assemblies, you increase your overall product reliability.

For more information on the full meaning of reliability, write for a copy of the new SPS booklet "High Reliability."



Federal Short Run Stampings may be your answer

Stretch your production tooling dollar up to 80% by using Federal "Controlled Tolerance" Short Run Stampings. That's the savings you get by using the Federal Stamping method instead of conventional tooling methods. You can put a new product on the market or make improvements in existing products with a minimum tooling investment. When quality, fast delivery and price are important factors, try Federal first for any quantity stampings from two pieces to 10,000. Size limitations are 10" x 14" and 3%" in thickness. Send your print or part to the nearest plant for a Federal Analyzed Quotation.

Write for free Catalog 201. Tells how to reduce costs by using short run stampings . . . full of design tips.

FEDERAL IN SMALL QUANTITIES

3 PLANT LOCATIONS

FEDERAL TOOL & MANUFACTURING CO. 3613 Alabama Ave., Minneapolis 16, Minn. FEDERAL SHORT RUN STAMPING, INC. 974 Lyell Avenue, Rochester 6, N.Y. FEDERAL STAMPING COMPANY 7319 Atoli Ave., No. Hollywood, Calif.

For More Information Write No. 226 on Inquiry Card-Page 32

Products

(Continued from page 110)

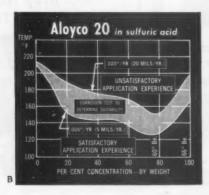
drill bushing directly over the hidden hole. The bushing guides a drill in matching the hidden hole to within 0.005" concentricity. Locates concealed nails, conduits and other installations without use of a magnet. Can also be used to locate layout points from opposite surfaces, to speed up template reproduction, and to find the proper drilling position for knock-out holes to remove broken drills. Zephyr Manufacturing Co., Inc., 201 Hindry Ave., Inglewood, Calif.

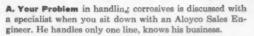
Write No. 25 on Inquiry Card-Page 32

Three-Inch Storage Tube



A new three-inch storage tube (WL-7225) receives information in the form of electrical impulses, stores it, and when signalled to do so, reads back electrically the accumulated information. Special features are: extreme ruggedness; 2.6 inch diameter of useful target; increased resolution; electron gun beam focusing to a fine spot; convenient coaxial connector for the output terminations making possible a compact mounting not previously attainable. One method of writing with the tube involves holding the screen at a fixed potential and applying a fixed positive charging potential of from 20 to 50 volts to the plate. The signal to be written is applied to the electron gun control grid, usually clamped to the cut off, while the beam is scanned across the target in the desired pattern. Westinghouse electronic tube division, P. O. Box 284, Elmira, New York. Write No. 26 on Inquiry Card-Page 32





B. Right Alloy for your application is based on 29 years of specialized experience in the field plus continuing research in Aloyco metallurgical labs.

C. Valve Casting is made from Aloyco design in Aloyco foundry, only foundry ever built to produce pressure-tight Stainless Steel Valve castings, exclusively.

D. Special Techniques in machining stainless steel, plus most modern equipment in Aloyco plant assure you precise tolerances, trouble-free performance.

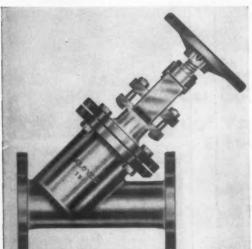
E. Aloyco Y Valve, shown here in various stages of production, is one of Aloyco's complete line of valve types, alloys, aizes, pressures—including nuclear valves.







BEHIND EVERY ALOYCO VALVE... specialization



... to help you handle corrosives

Valves often look alike—even stainless steel valves. But they won't necessarily perform alike when you get them into the line.

Here are some of the special skills and facilities that make the difference between Aloyco valves and others. Some of the "extras" you get with Aloyco valves are staying power, minimum maintenance, trouble-free operation in severe as well as mild corrosive service. Doesn't it make sense that the one company specializing in the manufacture of Stainless Steel Valves exclusively is your

best source of supply?



ALLOY STEEL PRODUCTS COMPANY

1312 West Elizabeth Avenue, Linden, New Jersey



Saves Time! Cuts Costs! for your

You get every benefit of latest cost-cutting methods and equipment when your gears are produced by Fairfield. "Automatic Cycle Crown Hobbing" is one interesting example of a new method for generating accurately crowned teeth on spur gears and pinions. In addition to significant time savings produced by a remarkably versatile machine, subsequent finishing costs can be reduced, or may be completely eliminated. Special tooth strength characteristics may also be obtained economically.

Check with Fairfield on all of your gear requirements. You get the advantage of high production rates and big volume output in an ultra-modern plant designed exclusively for producing fine gears EFFICIENTLY, ECONOMICALLY. Call or write.



TRACTORS . HEAVY DUTY TRUCKS . AGRICULTURAL MACHINERY . POWER SHOVELS AND CRANES MINING MACHINES . ROAD GRADERS . BUSES . STREET SWEEPERS . INDUSTRIAL LIFT TRUCKS For More Information Write No. 228 on Inquiry Card—Page 32

Products

Units Keep Heavy Mix on the Top



Installation shown here the core room of International Harvester's Memphis Works. The installation solved a problem: getting a mulled mix of sand, binder, water, resins and core oil to feed smoothly and dependably from a hopper into a new core blower. The solution was achieved by installing a bin vibrator on the wall of the bin, and mounting a vibratory feeder under it. The first unit prevents sticking or arching of material in the bin itself, while the feeder maintains a pre-set, unvarying flow of the mix into the core blower. The units are made by the Eriez Manufacturing Co., Erie 6, Pa.

Write No. 27 on Inquiry Card-Page 32

Machine Cuts Large Gear Costs



Large gears—from 80 to 200 inches in diameter and face widths to 74 inches—can now be finished faster, to higher accuracies with a king-size gear shaver developed by Michigan Tool Co., Detroit, Mich. The supporting table of the new shaver rotates within 0.0002 inches of concentricity and is accurate within 0.0002 inches of runout in the flat plane of rotation. This accuracy is maintained

(Please turn to page 116)



How Would You Like to Get 25% or Even 56% More Work out of Your Present Electric Trucks?



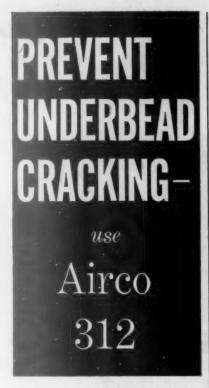
Here's the secret. Unique advanced tubular construction. Every positive plate packs more power. So you get greater battery efficiency—more power in the same size to fit your present trucks.

With the new Exide-Ironclad Batteries now available, your present trucks can work 25% to 56% longer than with batteries you have bought in the past. Now electric industrial trucks can do more work per shift, work longer, cost less than ever to own and operate. Only Exide batteries offer the twin advantages of more power and longer life. Find

out just how much you can gain. Call your nearby Exide office. Or write Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide

For More Information Write No. 229 on Inquiry Card-Page 32



- * AIRCO 312 mild steel all-position electrodes avaid underbead cracking.
- * Prevent excessive porosity in the welding of cold rolled steels.
- * Weld low alloy or mild steel when stress relieving normally would be required, but cannot be effected.
- * Weld steels which are to be vitreously enamelled.
- * Weld high sulfur free machining steels.

Airco 312 electrodes produce weld metal with excellent mechanical properties . . . Low Hydrogen content . . . Quiet arc action . . . Low spatter loss.

FREE — Send for the handy Airco Electrode Guide. It will help you select the right electrode for your specific job. Request catalog 1318.



AIR REDUCTION SALES COMPANY

A division of Air Reduction Company, Incorporated
150 East 42nd Street, New York 17, N. Y.
For More Information Write No. 230
on Inquiry Card—Page 32

Products

(Continued from page 114)

even under maximum table loads of 150,000 lbs. for the workpiece plus 50,000 for the fixture. The V-200 machine can shave either internal or external spur, helical or herringbone gears with or without integral shafts. Shaft size can be up to 40½ inches (the hole size of the table).

Write No. 28 on Inquiry Card-Page 32

Mass Produced Ultrasonic Cleaner



Industrial size high power ultrasonic cleaning system consists of a 40-kc, 500-watt output generator and a 10-gallon capacity transducerized cleaning tank. Industrial production requirements for a flexible, high capacity ultrasonic cleaner will be satisfied by this system. It is capable of one minute or less high speed precision cleaning of large assemblies or parts as well as big loads of smaller components. The stainless steel cleaning tank measures a generous 20" x 12" x 11" deep, and is deep drawn to eliminate cracks and crevices which might entrap soils. The Model G-5001 generator may be used to energize as many as ten Narda submersible transducers (Model NT-605) adapted to existing solvent, vapor or alkaline soak tanks of any shape or size up to 30 gallons capacity. Also, this generator will drive various combinations of smaller Narda SonBlaster tanks of the 600 and 1500 Series. The tanks may be furnished with recirculating systems for filtration and temperature control of cleaning solutions. The Narda Ultrasonics Corporation, 625 Main Street, Westbury, Long Island, New York.

Write No. 29 on Inquiry Card-Page 32

faster TO ERECT

faster TO RE-ARRANGE

faster
TO PAY FOR ITSELF



faster because... the exclusive Deluxe patented boltless shelf bracket replaces 90% of timeconsuming nuts and bolts, providing quick installation and quick, easy shelf adjustment.

Proof of this has been demonstrated again and again at trade shows where two men erected a complete section of Deluxe Shelving in less than 5 minutes.

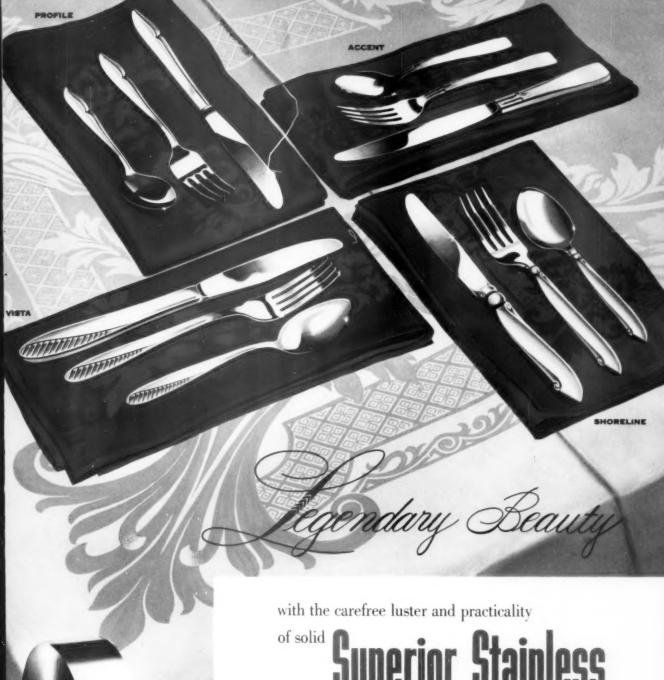
For any shelving storage problem, use Deluxe—the finest-designed and sturdiest shelving made. Call your local Deluxe dealer for quick, efficient layout service. Or write for the new Deluxe Shelving Catalog #30.

DELUXE METAL FURNITURE CO. Warren 10, Pa.

A division of the Royal Metal Mfg. Co.

DELUXE

For More Information Write No. 231 on Inquiry Card—Page 32 For More Information Write No. 232 on Inquiry Card—Page 32→



STRIP STEELS

With fine American-made flatware made of Superior Stainless Strip Steel, you enjoy the soft highlights and satin-smooth finish that are traditional in finest table services . . . plus the hard, tough, mar-resistant strength of quality stainless steel, good for generations of everyday use! Superior Stainless meets the standards of America's foremost tableware fabricators. Let us check with you on your own special needs.

Superior Steel

CARNEGIE, PENNSYLVANIA

The stainless steel flatware illustrated is produced by ONEIDA, LTD., Oneida, New York

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Direct Low-Cost

Microfilm Enlargements

A NEW reproduction machine that makes working-size enlargements of 35 mm microfilm is now on the market. Manufactured and distributed by the Charles Bruning Company, Mount Prospect, Ill., the machine is called the Copytron Model 1000 Enlarger-Printer.

Operation is fast and simple. After positioning microfilm in the enlarger head, the operator feeds a sheet of sensitized paper into the machine from the feedboard. In a matter of seconds a permanent, black-line enlargement is delivered into an ejection tray at the top of the machine.

Utilizing the electrostatic reproduction process, the machine does not require inks, stencils, plates or developing solution.

Reel, strip, or card-mounted microfilm can be enlarged 14 to 16 times. Prints are in black and white on standard size sheets, ranging from 8½" x 11" to 18" x 24". Additions and revisions can be made to the finished print just as on regular paper.

A magnified scanner permits the operator to view the microfilm image before the print is made. Inside, an enlarger lens system projects a microfilm image on to a mirror, which reflects it to the sensitized paper. Wherever light strikes the paper, the charge is neutralized. Wherever the light is



Herbert F. Bruning, president (left) and Paul J. Bruning, chairman of the board, Charles Bruning Company, Inc. examine permanent enlargement of 35 mm microfilm drawings. Notice the enlarger head and viewer on the right side of the machine. Paper is inserted on the feedboard at the front.

blocked, the charge is retained.

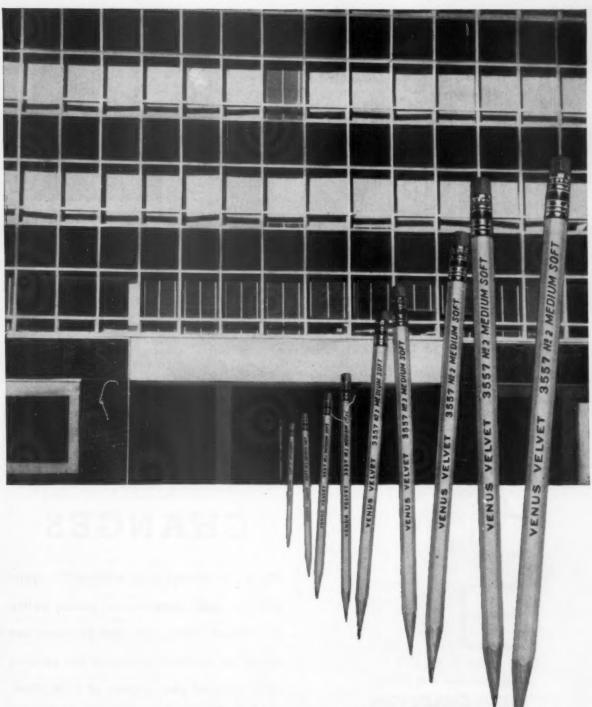
The image is dry-developed, using a black "toner" or powder. The toner forms a positive black-line enlargement. By changing the toner, direct enlargements can be made from positive films. The image is heat-fused to the paper by heat, making an impression as permanent as printers' ink.

Enlargements can be used for direct reference and distribution. They also can serve as short-run masters for making up to 50 additional reproductions on offset printing machines.

Priced at slightly under \$10,000

on a lease-purchase plan the machine can be used to good advantage by every department in the company. Placed in a centralized location or in a records department it is available to enlarge any document now maintained on microfilm.

For organizations which do not require a machine on their premises the Copytron is still within reach. The Bruning service bureaus throughout the country are equipped to pick up microfilm and deliver enlargements to customers desiring this type of service.



going to work in more offices

A big favorite in offices everywhere—Venus Velvet Pencils with smoother "homogenized" lead write blacker, clearer, with no hard spots, no soft spots. And Venus Velvets are stronger, last longer for extra economy. Exclusive Pressure-Proofing clinches wood to lead, ends internal breaking. Remember: Venus makes over 2500 job-designed pencils including Venus Coloring Pencils and Venus Unique thin lead coloring pencils. Ask, too, about the complete line of fine Venus erasers. Write for the Venus Velvet Work-Saver Kit: Dept. P-11 ©1958 Venus Pen & Pencil Corp., Hoboken, N. J.

easier writing . . . longer writing VENUS Velvet Pencils

Office Equipment



Two new staplers, a desk machine and a pocket-sized model, having been added to the Bostitch line. The desk stapler is available in gray and chrome or with black and chrome, holds 210 standard staples, has an adjustable clincher and the head of the machine can be swung back for tacking. The Traveler combines the efficiency of a desk stapler with pocket-size convenience. It is five inches long and weighs about the same as an ordinary pocket knife.

Write No. 30 on Inquiry Card-Page 32

A new free-flowing paste-type duplicating ink has recently been announced by The Print-O-Matic Co., Inc., Chicago. Designed to

overcome the unavoidable drip from even slight over-inking with liquid inks, the new ink is a freeflowing pigment. Ideal for use on any closed or open brush-type single-cylinder duplicator, it comes in a plastic dispenser tube. Write No. 31 on Inquiry Cord—Page 32



Globe-Wernicke Co., Cincinnati, Ohio recently introduced two new auxiliary typewriter arrangements-the auxiliary typewriter stand and the typewriter shelf. The flat top of a metal desk can be converted very quickly to m permanent or temporary arrangement. Forming an L-shaped desk, the metal stand gives 561 sq. ft. of additional working area. Both auxiliary typewriter stand and typewriter shelf are finished in choice of seal gray, copper tan, and sea green.

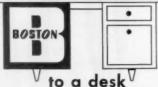
Write No. 32 on Inquiry Card-Page 32



A complete illustrated Postal Guide has been published by the Tension Envelope Corporation, 19th & Campbell Sts., Kansas City, Missouri. Its contents were verified by Postal Services Division, Post Office Department in Washington, D. C. This 56-page book gives up-to-date information on the new postal laws and also includes special information of interest to large and small mailers alike. Paper-and-ink weight tables, envelope mailing weight tables, and money saving ideas.

Write No. 35 on Inquiry Card-Page 32





small investment—BIG RETURN

BOSTON CHAMPION PORTABLE PENCIL SHARPENER

4 DECORATIVE COLORS

- 4 DECORATIVE COLOR green-blue-sandtone-gray
- less time wasted
- better efficiency
- less than 1½c a day for one year with long life ahead

Send for free comprehensive report on sharpeners, Booklet T.

C. HOWARD

HUNT PEN CO., Camden 1, N.J.



CHANGES

When you change your address . . . your title . . . your company . . . please notify us without delay. We like to keep our stencil up to date to assure the correct addressing of your copies of PURCHAS-ING Magazine. In requesting any change be sure to include the old information as well as the new.



More mileage per gal.

Gulf Oil's Philadelphia Sales Division boosts correspondence output and saves money with Edison Voicewriter

"Getting more mileage from all our facilities is second nature with us," states Mr. W. D. Nelson, General Manager of the Gulf Oil Corporation's Philadelphia Sales Division. "That is why we chose the adaptability and cost-saving advantages of Edison Voicewriter dictation when we replaced outmoded equipment. We are delighted with the economical way Edison Voicewriter has increased stenographic output . . . saved time for personnel who dictate."

A Voicewriter tryout is easy! There's no need to start off with a large system. With the Edison Voicewriter VPC-1, doubling as a dictating instrument and secretarial transcriber, any executive can quickly clean up correspondence at his desk, at home, or on

the road . . . have time for other important tasks . . . for only \$17.81 a month on the Edison lease plan.

Secretaries like the Voicewriter, too! Your voice comes through accurately, without interruptions, on the Voicewriter Diamond Disc. With the ability to get correspondence out of the way faster, with less effort, your secretary will find that she has more time for the interesting responsibilities of a real "Girl Friday."

You can rely on Edison! There's a Voicewriter system to meet the correspondence requirements of any office, large or small. And every Voicewriter user enjoys the benefits of Edison's more than 70 years' experience in the office correspondence field.



There's an EDISON product for every dictating and recording need... the individual Voicewriter for desk use, network dictating systems using dial or Televoice phones, and the pocket-size Midgetape that's battery-operated for recording on-the-go! For a free demonstration, or literature, write Dept. PM110 at the address below.

Edison Voicewriter • a product of Thomas A. Edison Industries

Thomas A. Edison Industries, West Orange, N. J. - In Canada: 32 Front Street W., Toronto, Ontario





TAKE IT EASY-

NEW EASY WAY TO GET THE



The new Hammermill E-Z Carry Pak* makes it a snap to remove Graphicopy Papers from the new Hammermill E-Z Paper Pak Carton*—the carton that is really easy to open.

•Patent Pending

Hammermill Graphicopy Papers are more than a line of papers. They're a new *idea*—an idea that makes it easy for you to buy, store and use the right paper for every job. Soon your Hammermill distributor will have them.

This new line includes 181 different items in 19 grades of Hammermill Papers, available in the weights, finishes and colors you need. Each item is individually numbered to make ordering easy—to make sure you get the right paper for every job. And Hammermill Graphicopy Papers come in new easy-to-open and

Mammermill Graphicopy Papers Include: MAMMERMILL BOND • COCKLETONE BOND • MANAGEMENT BOND • MAMMERMILL OFFSET WOVE • NAMMERMILL OFFSET VELLUM • NAMMERMILL OFFSET SUPER-SMOOTH •

GRAPHICOPY.
IS ON THE WAY

Hammermill's complete line
of papers for
printing, duplicating
and office use



RIGHT PAPER FOR EVERY JOB

easy-to-empty cartons, in packages with moisture-proof wrappers.

Hammermill Graphicopy Papers assure you of trouble-free running with their freedom from curl, and their accurately cut 8½ x 11 and 8½ x 14 sizes. Soon you will be able to get well-known Hammermill quality plus the convenience of ordering *all* your office papers from one source. Ask your Hammermill supplier about Hammermill Graphicopy Papers and the new handy "Paper Selection Guide" wall chart. Or write: Hammermill Paper Company, 1461 East Lake Road, Erie, Pennsylvania.



HAMMERMILL MIMEO-BOND • HAMMERMILL DUPLICATOR • WHIPPET BOND • WHIPPET MIMEOGRAPH • WHIPPET DUPLICATOR • HAMMERMILL DOUBLE PURPOSE MASTER PAPER
GLOSSETTE COATED OFFSET • DEEPLAKE OFFSET • HAMMERMILL OPAQUE • HAMMERMILL COVER • HAMMERMILL INDEX • HAMMERMILL TRANSLUCENT • HAMMERMILL BRAILLE



She'll make the best impression with



of Burlington's nylon fabric

The clearest...the sharpest...the best typewritten impression your machines can make will be made by ribbon of *nylon!* That's because *nylon* ribbon maintains its freshness; never gets chewed to bits. Next time you order, specify *nylon* in your favorite ribbon brand. You'll be more than pleased that you did.

Burlington
Industrial
FABBLICS CO.

1400 BROADWAY, NEW YORK IB . A Member of Burlington Industries
For More Information Write No. 237 on Inquiry Card—Page 32
124

Office Equipment



General Sintering Corporation of Melrose Park, Ill. is now manufacturing a new line of full automatic Scribe magnetic tape dictation machines. Once the machine is turned on, finger-tip action will electronically operate the start, stop, fast-rewind, record, play-back and error correcting controls. Housed in a magazine which can be slipped on and off the machine, the long-lasting tape need never be threaded or handled by the operator. For transcribing, the tape movement, in either direction, is controlled by a two-bar foot pedal.

Write No. 33 on Inquiry Card-Page 32



A new, large-capacity mechanized filing unit, designed specifically to simplify and speed office operations requiring reference to large numbers of index cards has been introduced by Remington Rand Division of Sperry Rand Corporation. The new filing machine, called the Kard-Veyer, is offered in four standard models which may be modified as to height, width, or both. As many as 75 different sizes and capacities are available. The new units, like the smaller models, provide a push-button selector. By pushing a button, the operator brings a desired tray of cards to proper working level without leaving her seat.

Write No. 34 on Inquiry Card-Page 32



COLUMBIA'S modern factory in Portland.



COLUMBIA'S TRACTORS speed the harvest in the Northwest.



THIS NATIONAL ACCOUNTING MACHINE is the key to successful operation at Columbia Tractor.



L. C. LACHANCE, Treasurer of Co-lumbia Tractor & Implement Co

"Our National System

saves us \$4,100 a year.

returns 67% annually."—Columbia Tractor & Implement Co., Portland, Oregon

"To properly serve our sixty-four dealers and to expedite the handling and analysis of dealer orders, we were prompted to install a National System," writes L. C. Lachance, Treasurer of Columbia Tractor & Implement Co. "Our National System has allowed us to do just that to improve the accuracy, speed and flexibility of service to our dealers.

"Billing, accounts receivable and sales analysis must be accurate and up-to-date to properly serve our many dealers in Oregon, Washington, Idaho and Alaska. Our National Class 3100 Accounting Machine has

made it possible to speed up the handling and analysis of dealer or-ders. Its automatic features enable us to do several jobs simultaneously, without spending extra time and

"Further, we now have increased our profits. Our National System saves us \$4,100 a year which represents a return of 67% annually on our investment."

L. C. Lachance

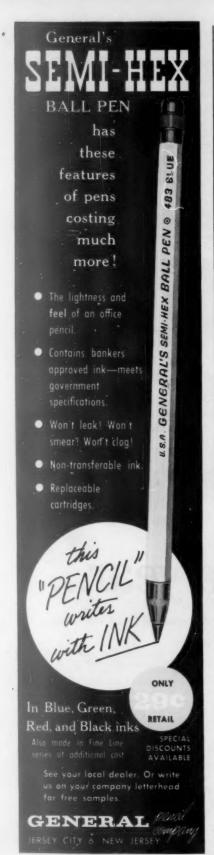
Columbia Tractor & Implement Co.

Your business, too, can benefit from the increased efficiency made possible by a National System. Nationals pay for themselves quickly, then continue to return a regular yearly profit. For complete information, call your nearby National representative today. He's listed in the yellow pages of your phone book.

TRADE MARK REG. U. S. PAT. OFF

ADDING MACHINES . CASH REGISTERS NCR PAPER (NO CARBON REQUIRED)

THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio 1039 OFFICES IN 121 COUNTRIES . HELPING BUSINESS SAVE MONEY



For More Information Write No. 239 on Inquiry Card—Page 32

Office Equipment



Copycat Corporation, 215 Fourth Avenue, New York 3, N. Y. has announced a new development in the basic process of making a photocopy. Sharp, picture-like copies of anything printed, written or drawn can be had in 12 seconds. The key to this is a patented spray process. The machine can be used every day for a month or more without the need to change its developing agent. It comes in two sizes: model F-9 for copies 9" wide by any length and model F-14 for copies up to 14" wide by any length.

Write No. 37 on Inquiry Card-Page 32



Cel-U-Dex Corporation, Box 1127 Newburgh, New Windsor, N. Y. has added to its new catalog a manual of filing and indexing information. A page of the catalog is devoted to special indexing problems, emphasizing the advantages of using transparent tabs with either permanent indices printed and acetate covered, or the insertable acetate tabs.

Write No. 36 on Inquiry Card-Page 32

FOR MORE INFORMATION
USE INQUIRY CARD
PAGE 32

HOW ABOUT YOU?

Do you know that many cancers can be cured if detected early? That an annual health checkup is your best protection against cancer?

Are you giving yourself this big advantage? Or are you taking chances with your life because of foolish attitudes about cancer like these?



some people from even learning cancer facts that can save their lives.

NEVER FELT BETTER!



Checkups help to detect cancer in its "silent" stage before you notice any symptom.



COSTS TOO MUCH!

Dollars you spend for the protection of your health can mean years of life.

Millions of Americans have made an annual checkup a habit...for life. How about you?

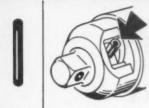
AMERICAN CANCER SOCIETY



For More Information Write No. 241 on Inquiry Card-Page 32->

PURCHASING

Rollpin replaces 12 different fasteners



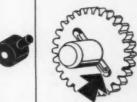
REPLACING A GROOVED PIN...
in this application, Rollpin
serves as a stop pin in a
ratchet wrench adaptor. With
its light weight and high shear
strength, Rollpin functions
perfectly ... cuts assembly



REPLACING A HEADED PIN . . . in this hinge pin application, Rollpin is simply and inexpensively driven in place, greatly reducing assembly costs. Constant spring tension holds Rollpin firmly in place . . . eliminates loosening of hinge due to wear.



REPLACING A KEY . . . Rollpin demonstrates its ability to do away with precision tolerances, in this heating system damper arm. Faster, cheaper and more satisfactory than previous assemblies.



REPLACING A HUB ON A GEAR . . . Rollpin, self-retained in shaft, is simply snapped into molded slot to position sintered gear. This application, by an office equipment manufacturer, effects major savings in assembly. Rollpin's high shear strength is particularly valuable here.



REPLACING A RIVET SHAFT . . . Rollpin serves as an axle for the sparkwheel of a cigarette lighter. No riveting or threading necessary . . . faster assembly. Note flush, clean fit.



REPLACING A DOWEL PIN . . . Rollpin is used here to prevent rotation of a thrust bearing. No reaming, no special locking. Easily removed. Lowest possible dowel pin cost.



REPLACING A COTTER PIN . . . Rollpin assembly time is shorter, service life ten times longer. Vibration-proof flush fit. Easily removable.



REPLACING A BOLT AND NUT...
Rollpins act as fasteners and pivots for the linkages in this electric welder. Rollpins may be used with a free fit in outer or inner members depending upon product design require-

ments.



REPLACING A SET SCREW... to fasten automobile brake handle a short length Rollpin is self-retained in the hand grip but can easily be driven into over-drilled hole in shaft for simple handle removal.



REPLACING A RIVET . . . Rollpin serves as guide shaft for spring-loaded electrical interlock contacts. This electrical equipment manufacturer reports that rivet failure previously occurred at the clinched end under normal operating impact and vibration.



REPLACING A CLEVIS PIN...here Rollpin holds firmly in clevis, permits free action of moving member. Rollpin application shown is the plate of a home workshop tool.



REPLACING TAPER PINS . . . in the assembly of precision differentials eliminated cost of taper pin reamers and the entire reaming operation. Rollpin costs less than a taper pin and installation is cheaper. They remove easily.

WHERE CAN YOU USE THIS SIMPLE FASTENER?



Rollpin is the slotted tubular steel pin with chamfered ends that is cutting production and maintenance costs in every class of industry.

Drives easily into standard holes, compressing as driven. Spring action locks it in place—regardless of impact loading, stress reversals or severe vibration. Rollpin is readily removable and can be re-used in the same hole. Made in carbon steel, stainless steel and beryllium copper. Write for samples and information, ELASTIC STOP NUT CORPORATION OF AMERICA. 2330 Vauxhall Road, Dept. R47-1115, Union, New Jersey.



Association News

Purchasing Objectives Stressed At Fourth District Conference



Professor Bruce D. McSparrin, Jr., of Indiana University giving the group some thought-provoking ideas on the future of purchasing in the materials management concept.

National Association of Purchasing Agents President Gordon Burt Affleck set the stage for a highly successful Fourth District Conference at Indianapolis.

In a keynote address, he pointed out the importance of the purchasing agent acting like management if he wishes to be considered as part of management. Mr. Affleck also stressed the necessity of keeping up to date in research and knowledge of substitutes in order to hold down the steady rise in prices. Major emphasis was devoted to national policy involving injury to domestic firms resulting from diverting purchases to foreign suppliers.

Urging the group to make their views known to representatives in Congress, President Affleck cautioned, "One cannot logically buy his supplies from abroad and

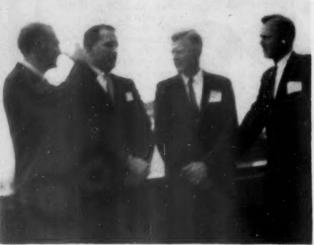
then complain about foreign competition in the market in which he sells."

A well-balanced program presented a variety of timely and important subjects discussed by some of the finest purchasing authorities in the country. The future problems and interests of purchasing were highlighted through objective views on materials management, human relations, foreign purchases, and economic forecasting.

One of the very interesting innovations of the program was the participation of five foreign teachers, currently attending Indiana University. The young men, representing Germany, Italy, Norway, Belgium and Turkey, presented an excellent cross-section of European thinking on foreign buying.



E. Wayne Allen, Diamond Chain Co., receiving the Homer Hauger Award for outstanding contributions to the purchasing profession. Mr. Allen served as conference program chairman.



Bill Van Derbeck, National Steel Co., isn't thumbing his nose. He's just scratching it as he listens to Dr. John Hoagland, Michigan State University (second from left), Bill Pierce (second from right) and Chet Ogden (extreme right) of the Detroit Edison Company.

For More Information Write No. 242 on Inquiry Card—Page 32→ Wire rope users in every field report low operating costs



Rigged with USS American Tiger Brand, of course!



Tiger Brand* Wire Rope is the first choice in all fields because it's made to unvarying quality standards. It possesses strength, toughness and flexibility in the right combination to stand up tirelessly under long, hard service.

Its Excellay Preformed construction makes it easy to handle...quick to install. It requires shorter breaking-in period...has less tendency to loop, kink or whip...it hugs sheaves and drums at all speeds. And it offers the highest resistance to bending fatigue.

You can depend on Tiger Brand to help reduce operating costs . . . to do a more efficient job in any service calling for quality in wire rope. That's why there's more Tiger Brand in use than any other make. Call us today for any type of wire rope you need. Or write American Steel & Wire, Rockefeller Building, Cleveland 13, Ohio.

American Steel & Wire Division of



United States Steel



Skilled personnel and advanced facilities combine at Lavelle to assure the high quality workmanship demanded in airframe, missile, jet engine and electronic components.

With a long time background of experience, Lavelle craftsmen utilize modern equipment and new fabricating techniques to produce welded and machined sheet metal parts or assemblies made of stainless steel, titanium, nickel or aluminum alloys. Lavelle fabricates weldments...by resistance, automatic or manual inert gas, metallic arc and oxy-acetylene welding. X-Ray, Zyglo and Magnaflux methods of non-destructive testing are used to establish and control weld quality.

You can depend on Lavelle craftsmanship to meet your exacting requirements...on time...at reasonable cost. Call on Lavelle when you need the finest in specialized fabricating services.

Write for illustrated brochure describing Lavelle's services in detail.



LAVELLE AIRCRAFT CORPORATION . NEWTOWN, BUCKS COUNTY, PA.

Between Philadelphia, Pa., and Trenton, N.J.
For More Information Write No. 243 on Inquiry Card—Page 32

Association News

Burnett Addresses Chattanooga P.A.'s



Left to right: Tom Mastin, president of the Purchasing Agents Association of Chattanooga; Bob Burnett, vice chairman of the N.A.P.A. public relations committee; and Paul Fahey, national director.

A recent dinner meeting of the Purchasing Agents Association of Chattanooga was held at the Hotel Patten in Chattanooga. The speaker for the evening was Robert S. Burnett, vice chairman, public relations committee for the National Association of Purchasing Agents. Mr. Burnett is from Louisville, Kentucky.

Saginaw Ass'n Launches New Year

The beginning of the 1958-59 purchasing year for members of the Saginaw Valley Purchasing Agents Association was a meeting held at the Empire Steak House in Bay City.

Most of the meeting was taken up with the installation of officers and a discussion and vote of proposed amendments to the by-laws of the association, A film was shown entitled "Mackinac Bridge Diary."

Denver P.A.'s Have Kickoff Meeting

The Purchasing Agents Association of Denver held its first meeting of the Fall at the Terrace Room of the Brown Palace Hotel. The speaker for the evening was Galen Andrews, purchasing agent for Barnes Drill Co., Rockford, Ill. His subject: "Ignorant Advancement." Mr. Andrews is in demand as a speaker on purchasing topics and has written extensively for publications on purchasing.

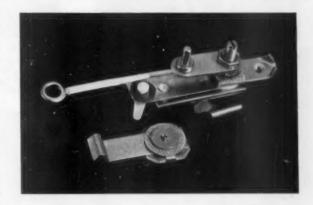


6 Taylor-Fabricated Laminated Plastic Insulators Protect Control Elements of GE Automatic Toaster

These insulators for the pop-up mechanism, color control unit, and heating element in the General Electric Automatic Toaster are made of continuous filament woven glass fabric with melamine resin bond. This Taylor Fibre Co. material was selected for its ability to withstand the temperatures encountered in the toasting operation, its excellent arc resistance and mechanical strength, and its cost, which is lower than that of the mica insulators formerly used.

Another factor in the decision was the capacity of Taylor Fibre Co. to produce the fabricated parts to specification, and in the large quantities required, at reasonable cost.

You, too, may have applications which can utilize the combination of physical, mechanical and electrical properties found only in laminated plastics. Our application engineers will be glad to discuss them with you, offer engineering assistance, and recommend a Taylor grade that will fit your specific requirements. Our plants at Norristown, Pa., and La Verne, Calif., are both fully equipped for fast supply of basic materials and finished parts. Write us for detailed information or to arrange for a Taylor Fibre man to call on you. Taylor Fibre Co., Norristown 36, Pa.





Association News

More Value For The



A highlight of the convention was the presentation of the N.I.G.P. Distinguished Service Award to City Purchasing Agent Joseph W. Nicholson of Milwaukee, Wisconsin. Shown at the award ceremony, Mr. Nicholson is flanked by Joseph Spagna of the City of New York, and John Ward of the City of Chicago.

MORE THAN 1500 federal, state and local public purchasing agents met recently in Boston. All members of the National Institute of Governmental Purchasing, Inc., the theme of their convention was expressed in the title, "More Value for the Tax Dollar."

President Joseph V. Spagna, commissioner of purchases for the City of New York opened the Thirteenth Conference and Products Exhibit with a report which showed the tremendous gains made by the N.I.G.P. in the last year.

Some of the highlights of the two and one-half day conference



Dr. Howard T. Lewis was the featured speaker at one of the luncheon meetings.



Kenneth E. Punnett, city purchasing agent, Rochester, N. Y. presided at a panel session. Members of the panel were (left to right): Clifton E. Mack, General Services Administration; R. G. Wessells, District of Columbia; and Ralph R. Siller, Florida State Purchasing Commission.



Miss Mary Bosma, secretary to Albert Hall, executive vice-president of N.I.G.P. gives some information to Al Hazur of the State Department.



Many of the lady P.A.'s enjoyed the attractive displays.

Tax Dollar

were: A talk by Rexford G. Wessells, procurement Officer, District of Columbia, entitled, "Ways and Means of Stimulating Competition for Public Business"; and "Automotive Developments," a talk by John G. Krieg, City Purchasing Agent, Cincinnati,

Dr. Howard T. Lewis, professor emeritus of marketing, Graduate School of Business, Harvard University was the principal luncheon speaker on opening day. Dr. Lewis told the group that the purchasing profession had come a long way in its quest for recognition, but they hadn't reached it yet.



Maurice Park (right) presents retiring President Joseph V. Spagna, City of New York with a gavel.



"We can cut your costs by"

on "Purchasing Fire Hose."



The discussions didn't stop when the meetings ended.

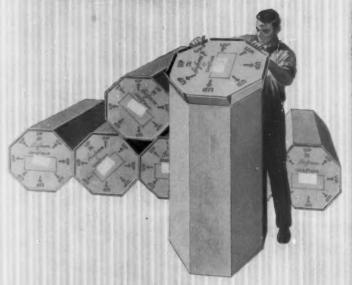


Leo Weil (left), City of Cleveland, and Ernest Brewer, City of Atlanta, conducted a panel discussion



John Moran (center) of the City of Boston and general chairman of the convention stops at one of the booths in his tour of the exhibits.

Corrugated cushion for an Airfoam ride



This H&D corrugated drum makes rolls of Goodyear Airfoam easier to pack, more economical to ship. Flexible ends provide protection against compression and shock. Packaging problem? Better see H&D.



HINDE & DAUCH

Division of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING . SANDUSKY, OHIO 15 FACTORIES . 42 SALES OFFICES

For More Information Write No. 246 on Inquiry Card-Page 32

Association News

Dayton Ass'n Represented at Sixth District Conference

The Dayton Association was well represented at the Sixth District Joint Committee Conference in Mansfield, Ohio. Three committee chairmen and the national director attended. They were: Phil Hull, national director; Ted Thompson, education; Forest Nation, value analysis—standardization; and Tom Becker for public relations.

This annual conference, or workshop, which is in its second year, has for its scope "to formulate, discuss, and exchange ideas" among the chairmen of the three committees in each association of the Sixth District.

Lou Keyes, Dayton Rubber Co., was host to the Dayton Association when the Dayton Rubber firm opened it's doors to a plant visitation and dinner. This was another of the association's excellent programs planned for the year.

Coming up for November 12 is a joint meeting with Springfield, Cincinnatti, Columbus, and Lima. National President Gordon Burt Affleck will be the speaker. Busses from Dayton will be furnished and a large turnout is expected.

Eastern N.Y. Fall Outing Huge Success

The annual Fall outing of the Purchasing Agents Association of Eastern New York at Picard's Grove in New Salem, N.Y. was attended by 368 purchasing agents and guests. President Eugene L. Hunt, purchasing agent of Albany Castings Co., Inc., Voorheesville, N.Y. welcomed the members and guests and announced a record attendance.

Program Chairman Austin A. Woodward of the Woodward Co., Albany, N.Y. presented prizes for golf, volleyball, horseshoes and darts to the winners. Many door prizes donated by local suppliers were also handed out.

For More Information Write No. 247 on Inquiry Card—Page 32→

PURCHASING





MAJOR DIAMETER CHAMFER ANGLE HARDMESS BACK TAPER THREAD ANGLE

Threads can be no better than the taps you use. That's why it's important to use taps that are as near perfection as it is possible to make them.

"Greenfield's" close control of every measurable element of a tap is your guarantee that you are buying the best that can be made. This accuracy is bound to be reflected in the threads they tap.

IF IT CAN BE MEASURED GREENFIELD MEASURES IT

REENFIELD TAP and DIE CORP. GREENFIELD, MASS.



"MILES OF SAVINGS" RIDE ON COPE CABLE LADDER

Over two miles of Cope aluminum cable ladder support countless miles of aluminum interlocked armored cable at the first unit of Metropolitan Edison Company's new Portland generating station, currently rated at 165,000 KW. Ultimate capacity is expected to be approximately 1,000,000 KW. Selection of Cope cable ladder by Gilbert Associates, Inc., consulting engineers, permitted necessary system flexibility and ease of installation . . . at cost savings and quality not possible with other available methods and materials!

ASK FOR PROOF FROM COPE

Other manufacturers can only talk about your system requirements—Cope is prepared to prove Cope system performance with accurate technical data, load deflection tables, actual heating tests, etc. Whenever you ask about cable supporting equipment ask for proof!Cope has it.

System Layout No Problem

Cope cable ladder combines main stringers of "Z" section aluminum with slotted rungs at specified intervals for securing of cables. Strong, yet lightweight, it is easy to handle, easy to install—even in the most cramped quarters. Cope's complete line of fittings and accessories permit required changes in direction, elevation or other conditions of system layout. Cope's pin-type coupler joins ladder straight section and/or fittings in seconds ... permits easy connection to other Cope systems ... expanded metal wireway (trough) and cable channel. Every Cope system is complete ... no hardware or other extras to buy later.

Cuts Costs Three Ways

A single run of Cope ladder or wireway supports as many cables as several runs of conduit. From the start, you save in materials and labor costs . . . keet space requirements to a minimum! An easy-toget-at Cope system cuts maintenance costs, too . . . permits ready re-routing of existing cables or adding of new cables in the future. All Cope cable supporting equipment is available in aluminum or hot dip galvanized steel construction.

Contact your authorized Cope distributor . . . or write to T. J. Cope Division, Rome Cable Corporation, Collegeville, Pa.

Cope sells exclusively through electrical wholesalers who specialize in materials and service for every electrical installation requirement. You can depend on them for fast service and competent advice.

T. J. COPE Division

For More Information Write No. 248 on Inquiry Card-Page 32

Association News

N.A.P.A. Announcements

Harold A. Berry, general chairman, national committee on education has appointed William H. Harrison, Tennessee Eastman Company, Div. of Eastman Kodak Co., Kingsport, Tenn., as chairman of the project development committee on data processing. Mr. Harrison, who has been District No. 7 education chairman for several years, replaces Frank C. Walters, Esso Standard Oil Company, Baton Rouge, La.

Mr. Walters is taking an early retirement from his company, where he has had unusual success with programming and operating the data processing of inventory and purchasing operations. Mr. Walters will continue as a consultant in the field of data processing upon his retirement

Eastern New York P.A.'s Make Plant Visit

Program Chairman Austin A. Woodward of the Woodward Co., Albany scheduled a plant visitation as a part of the regular meeting of the Eastern New York Association of Purchasing Agents.

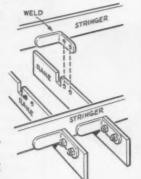
The purchasing agents visited the Huyck Felt Co. in Rensselaer, N. Y. at 9:00 AM and 1:15 PM. Roderick T. Clarke, vice president and general manager of Huyck Felt Co. welcomed the visitors prior to the tour of the plant. C. J. Chudowsky, buyer for Huyck Felt Co. was in charge of arrangements.

8th District Vice President of the National Association of Purchasing Agents J. Dukehart Chesney, purchasing agent of Huyck Felt Co. made his official visit to the Eastern New York Association at Wolfert's Roost Country Club at 7:00 P.M. He was welcomed by President Eugene L. Hunt, purchasing agent of Albany Castings Co., Voorheesville, N. Y. and National Director William H. Flint, manager of purchases of Cluett, Peabody and Co., Troy., N. Y. Mr. Chesney was the speaker of the evening.

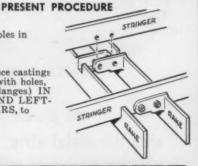
PREVIOUS PROCEDURE

- Drill bolt holes in 'clip angles."
- 2 Weld clips to stringer.
- 3 Drill holes in rake blades.
- Mill stringer slots in rake blades.
- 5 Bolt rakes to clip angles.

REPEAT FOR EACH BLADE



- Drill bolt holes in stringer.
- Bolt one-piece castings (complete with holes, slots, and flanges) II RIGHT- AND LEFT-HAND PAIRS, to stringers.





Type H rake classifier made by Dorr-Oliver Inc., of Stamford, Conn., separates solids in liquid-solid mixtures into two fractions according to particle size. Fine materials overflow with liquid

particle size. Fine materials overflow with liquid at lower end of inclined tank: larger particles settle to tank bottom, are continuously raked up inclined slope and discharged "over top".

Rake blades move in oval track due to motion of rocker head, must be precisely aligned to move settled material up to next rake without either scraping or undue clearance.



Use of Cooper Alloy close-tolerance shell casting eliminates 3 out of 5 machining operations for Dorr-Oliver rake classifier blades, showing

How to Cut Fabrication Costs with **Close-Tolerance Stainless Castings**

Previous method of attachment • 11/16" cored holes had to be smooth. of rakes to stringers was by "clip angles" welded to stringers, drilled and bolted to simple flat blades themselves drilled and slotted as shown. Construction was expensive, and often unsatisfactory, in that heat of welding tended to put rakes out of alignment.

In redesigning, Dorr-Oliver decided to eliminate the clip angle as a separate third piece by incorporating it into the blade castings. Original conception was to cast rough slots and holes, then mill and drill them to dimensions. Cooper Alloy, after study of the piece, determined that with close-tolerance plastic shell cores, both bolt holes and stringer slots could be cast directly in the rake blade, without need of further machining. Also, that by using right- and left-hand patterns of rake flanges, two rake blades could be bolted to stringers with one set of bolts.

Casting requirements stringent

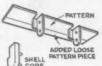
Bolted face of each of the upright flanges required a smooth finish (250 A.S.A. Standard).

- accurate to ±.010", and precisely positioned for proper fitting of
- Stringer slots had to be precisely positioned, accurate in dimensions to ±.025".
- · Multiplicity of patterns for different widths of rake blades had to be reduced, for economy.

Casting solutions For the critical flange faces and bolt holes, shell "cake" cores, capable of holding pre-

SHELL SAND CUTAWAY ELEVATION:

ENTIRE PIECE IN DRAG.



CASTING cise dimensions down to $\pm .010$ ", were prepared. They were inserted and became an integral part of the greensand molds that formed the less critical outer blade areas.

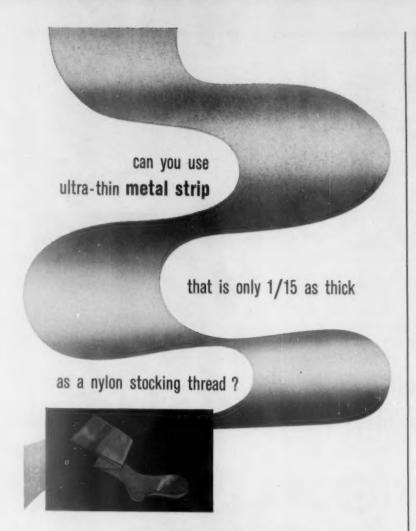
To save cost of a complete new pattern for each rake size, all sizes of rake were designed to have the same blade thickness and flange dimensions. Patterns were then made of the narrowest-width blade in each series,

loose pattern pieces being added to increase blade width of the larger rake sizes.

Results - "These rake blades", says Dorr-Oliver, "were used directly as cast, with no additional machining of any kind. Dimensions were precise, surfaces smooth, and finished alignment better than with previous 3piece welded assembly. New procedure saves time and handling, and has reduced our manufacturing costs on this piece considerably "

Such economy possibilities are available in almost any shape, no matter how simple, or how "cut-and-dried". Cooper Alloy has specialized for 35 years in achieving such uncommon results in close-tolerance stainless steel castings, and can do the same for you.

To check on it, why not take advantage of our Foundry Engrg. Service? Just send us (without obligation) a blueprint or outline of your problem part, for cost analysis, to: Foundry Products Division, COOPER ALLOY CORPORATION, Hillside, N. J.



TO MEET YOUR REQUIREMENTS for special materials, the Precision Metals Division of Hamilton Watch Company is now producing ultra-thin metal strip and foil in thicknesses from .010" to .0001". (The thickness of a 15 denier nylon thread is approximately .0017".)

Precision Metals Division strip and foil are available in practically any alloy and in any quantity for development or production. In

addition, special alloys can be made to your exact specifications and furnished in whatever form you require.

An illustrated facilities booklet showing our modern, completely integrated metals plant is yours for the asking. Simply write to Dept. P-11.



Hamilton Watch Company

Precision Metals Division / Lancaster, Pennsylvania

Creator of the world's first electric watch

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Association News

Dallas P.A.'s Meet With Sales Executives

The Purchasing Agents Association of Dallas meet jointly with the Dallas Sales Executive Club at the Royal Room of the Dallas Athletic Club. Speaker for the evening was Dr. William Crissy, president, Personnel Development Institute, Inc., New York City. The subject of his talk was "Buying for Profit-Selling for Profit." Dr. Crissy, who holds many degrees in the field of psychology and management, heads the National Sales Executive Graduate School of Marketing at Rutgers University. He is a highly interesting and entertaining speaker. His talk was directed to both sales managers and purchasing agents.

The following are new members of the association: Lawrence Meyer, Hesse Envelope Co.; James J. Nelsen and Joseph B. Horne, Space Corp.; and Joe B. Bell, Jr., Tool Supply and Engi-

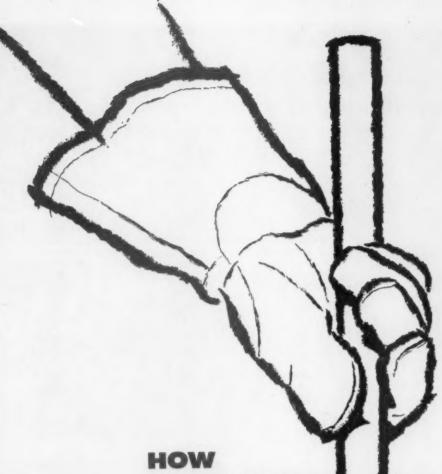
neering Co.

Northeastern Penn. P.A.'s Hold First Fall Meeting

The Purchasing Agents Association of Northeastern Pennsylvania held their first Fall meeting at the Hotel Casey, Scranton, Pa. Cocktails were served at 6:00 P.M. followed by dinner at 6:30 P.M. Ralph Lewis, chairman of the program committee, had arranged an interesting program.



"Before we discuss an order, let me check my inventory control record."



HOW TO ANCHOR STEEL FORMS

You can anchor steel forms in a jiffy when you use Bethlehem Form Stakes. The sharp, projectile-point stakes drive easily, even in the hardest road base. And they are made of high-carbon, high-strength steel to withstand repeated battering. Yet they're economical, because they can be pulled out and used over and over again.

Bethlehem Form Stakes, of 1-in. diameter and 24 in. long, come in bundles of ten, wire strapped for convenience in handling. They can also be supplied in other sizes to meet special needs. For full information, call the nearest Bethlehem sales office.

Made of high-carbon, high-strength steel, these stakes are built to take heavy battering.

FAST

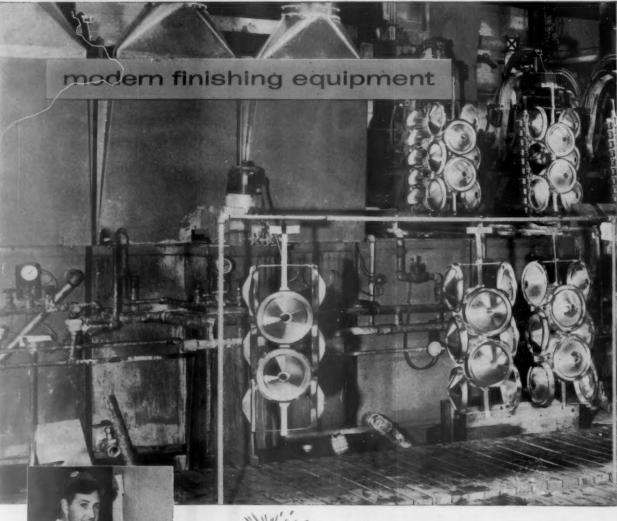


Bethlehem Form Stakes speed anchoring jobs because they drive fast. They are economical because they can be pulled out and re-used many times.

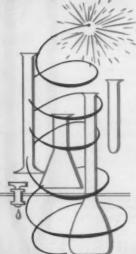
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BETHLEHEM STEEL





Gilbert Gleichner, "pushbutton electro-chemist" and operator of our newest Stevens automatic anodizing unit. Bert says he's getting more done, better, in less time, than he ever has before.



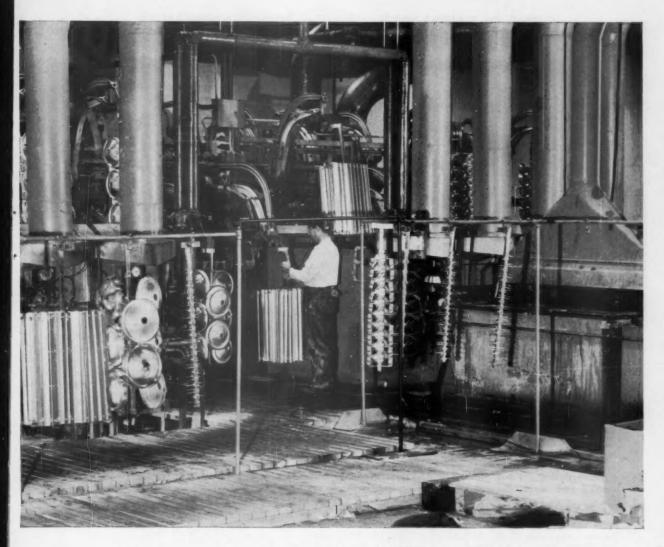
...a part of

FOR

This mechanical wonder, a completely automatic anodizing unit, can carry thousands of component parts through the entire anodizing process at a predetermined cyclical rate that sets up optimum immersion for the job in hand, ruling out the human element of variation in manual and semi-automatic operation!

Benefits to you are obvious. A finer anodic finish in natural, bright, or color... at lower cost... with on-schedule delivery. And, best of all, components in *final* form, ready for





our complete facilities

FABRICATING YOUR COMPONENTS

application to your product on your own assembly line.

Why not review your component requirements? If it can be made of aluminum—stamped, drawn or rolled-formed—and you need large volume, high-speed, quality production, get in touch with us. The anodic unit above is one of our many finishing units capable of a variety of mechanical, chemical finishes. All part of our mill-to-final-finish facilities, at your service.



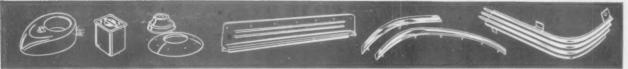
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CLEVELAND CONTAINERS

are used to

package all kinds of spare parts economically...with greater protection...less weight!



Shown are convolute Cleveland Containers . . . each precisely designed for the product it packages. Made of high quality fibreboard, the required rigidity and strength are built-in.

Note the different ways the cans may be opened. Two well known companies, J. W. SPEAKER CORPORATION and VICKERS, INC., chose tear-string containers as shown at the left; the rectangular can is designed for re-use, and the round can provides for complete protection at less cost. A suitable container can be designed to meet your packaging problem.

Anticorrosive, moisture and grease resistant liners can be used to protect your product from the inside . . . all kinds of labels and wrappers may be used for display on the outside.

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Association News

Carolinas Chapter of NIGP Meets in Charlotte

The Carolinas Chapter of the National Institute of Governmental Purchasing held its regular fall meeting at the Hotel Charlotte. Bruce Boyette, assistant city manager and purchasing agent for Wilson, was in charge of the program and served as chairman for a panel discussion during the afternoon session.

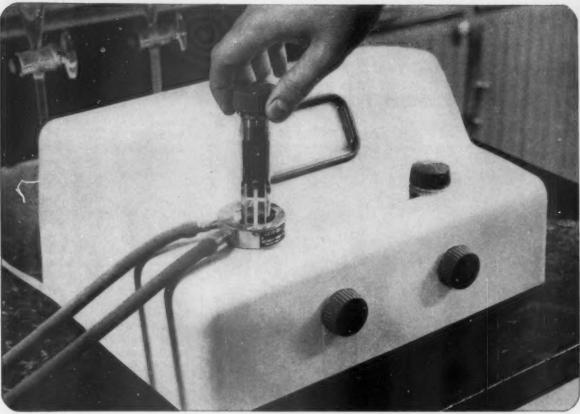
Serving on the panel were Max Holland, city manager of Camden, S.C.; Charles L. Lineback, city manager of Salisbury; Alex Mc-Mahon, assistant director of the Institute of Government; G. C. Robinette, city purchasing agent for Columbia, S.C.; and Aaron C. Shepherd, city purchasing agent for Winston-Salem.

Some of the topics discussed were: purchasing and stocking small supplies, purchasing gasoline, writing specifications, handling informal bids, buying canned foods, discontinuance of manufacturer's discounts of automobile purchases, regulation of the use of automobiles, and relations with other departments and personnel. Other topics were suggested from the floor and everyone present had an opportunity to join in the discussion.

Rothrock Addresses Evansville P.A.'s

The Purchasing Agents' Association of Evansville was very fortunate to obtain D. A. Rothrock as the principal speaker for a recent meeting. Mr. Rothrock is the general sales manager of the plastics division of the Rohm & Haas Company of Philadelphia, Pennsylvania. He spoke to the Association on "Looking at a Chemical Company Through Plastic Glasses".

In addition to the principal talk, a "Problem Clinic" was conducted by Mr. William Schrawder, director of purchases for Shane Uniform Company in Evansville. The topic of this clinic was "Problems in Source Selection."



COLORIMETER (inherently extremely accurate) determines percentages of molybdenum, tungsten, cobalt and manganese in A-L tool steel to insure consistent, high quality.

Colorimeter measures exact chemical composition of Allegheny Ludlum tool steel melts

Accurate adjustment of alloys guarantees uniform heat treatment, predictable dimensional changes, reduced grinding, standardized machining operations.

Close control of molybdenum, tungsten, cobalt and manganese is at the heart of a good tool steel melt. In addition to the usual testing methods, Allegheny Ludlum's chemical laboratory checks these metals with Colorimetry because of its inherent, extreme accuracy.

On the basis of the Colorimeter's findings, it is possible to make carefully calculated furnace additions of fetro-alloys, insuring precise control over chemistry. This guarantees your receiving the exact analysis order after order, providing uniformity of heat treatment, predictable dimensional changes, reduced grinding and standardized machining operations.

Colorimetry is but one step toward careful control over composition. Allegheny Ludlum also sets exacting purchasing specifications on raw materials and scrap. Quality Control checks all incoming orders to see that they conform with these specifications. Another guard toward your getting your exact specifications: each ingot bears a metal tab showing heat number.

Allegheny Ludlum stocks a complete line of tool steel sizes and grades. Call your nearest A-L representative; you'll get quick service and counsel on such problems as heat treating, machining, grade selection, etc. Or write for A-L's publication list which gives full data on the more than 125 technical publications offered. They'll make your job easier.

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Typical of the many, many favorable comments received is one from a shipper who moved from East Chicago, Indiana to Muskegon, Michigan:

"This is to compliment you on a job well done... Your service in moving was excellent and to my complete satisfaction. Therefore, I would recommend your service and company to anyone moving."

So, whether it's a sales manager, engineer, production manager, or a top executive, give him the finest: call Mayflower!



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Association News

Air Force Procurement Conference

Forty-five persons from Air Materiel Command's headquarters and field installations attended a procurement and production conference at Wright-Patterson Air Force Base.

The conference usually is held annually to bring together AMC's procurement and production directors to discuss and clarify new policies, procedures, and programs which have been put into effect or which are planned to be brought into the program

brought into the program.

Major General W. O. Senter, director of procurement and production, welcomed the conferees from the air materiel areas, Air Force depots, the Aeronautic Systems Center, and other concerned AMC activities. Colonel W. R. Graalmen, deputy director, procurement, was chairman of the meeting.

Eighteen specific areas of interest were covered in the two-day meeting. Some of the topics: Administration of Facilities Contracts, Use of Auditors in Cost Analysis and Projections, Small Business Procedures, Overtime and Extra-Pay Shifts, the recent re-alignment of the Directorate, Weapon Systems Integration Concept, and the Ballistic Missile Program.

Prior to the adjournment of the conference a round-table discussion was held for a general review of all topics.



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Wire and Cable Div., Fort Wayne, Indiana



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Plastic and rubber power supply cords. Terminations of all types (molded plastic and rubber). Complete line of Coiled Cords, including HPN.

Cords Limited Division, DeKalb, Illinois

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Another extra is the Essex single source plan, with its complete family of matched electrical components.

Ask your engineers about SX, its products, quality, production maturity, and call your local Essex application specialist to learn more about this practical component purchasing plan . . . or write.



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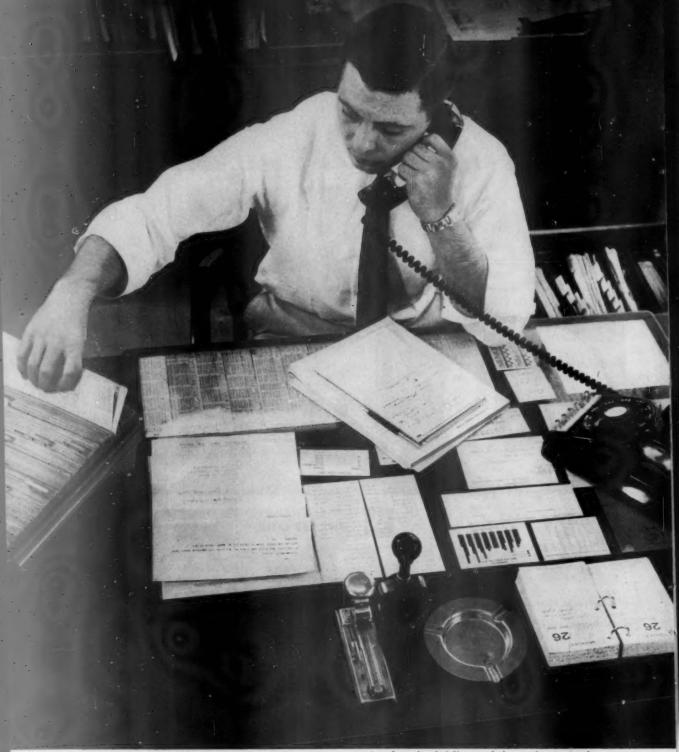
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145

integrated CRUCIBLE steel service



Ask the Crucible inside account salesman for a rundown on all the services his warehouse offers. He's your contact with completely integrated services

ranging from local delivery of the steels you need to metal research.

makes available a local

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- (2) in-stock deliveries
- (3) metalworking assistance
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Here's what the warehouse near you can offer -

(1) Simplified Ordering. The inside account salesman assigned to you expedites all your orders, arranges for extra services and speeds up shipments when necessary. His personal responsibility means convenient ordering, no delays, no mistakes, nor misunderstand-

(2) In-stock delivery of 16,000 specialty steel items, cut or processed to your specifications. Because warehouses maintain these stocks at high levels, you're sure of getting immediate delivery.

(3) Metalworking assistance. Experienced service engineers will work with your engineers to solve machining, heat treating or any other metalworking

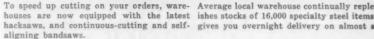
(4) Metal research. Crucible metallurgists visit local warehouses regularly. They'll bring the benefits of Crucible's experience and continuing research to your plant, too.

This service in depth is available because the Crucible operation is completely integrated from ore to steelmaking to warehouse delivery to you. But get full details. Ask the Crucible salesman to list all the services his warehouse offers. Crucible Steel Company of America, Dept. PK13, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

Keeps you up-to-date on local stocks of specialty steels. Just ask the Crucible salesman to place your name on the regular mailing list.

One Source For All These Steels







To speed up cutting on your orders, ware- Average local warehouse continually replenhacksaws, and continuous-cutting and self- gives you overnight delivery on almost all.



Sales-service engineers - who specialize in tool steels, stainless, alloyswill gladly help you with any type of metalworking problem.

TOOL STEELS-Water, oil, air hardening, shock resisting, hot work, plastic and die casting steels in all forms, including bars, sheets, plates, drill rod, hollow bars, forgings and flat ground stocks

HIGH SPEED STEELS-Crucible's famous "Rex"® steels: Rex Thrift Finish rounds, hot rolled and cold drawn flats and squares, drill rod, forgings, sheets, plates, and tool bits

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Bossert's re-design service can help you develop stampings for parts and assemblies that are now being cast or forged or machined, usually with substantial savings in cost. Send us blue prints or samples for our recommendations.

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Find out how our facilities can be
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Association News

New England Ass'n's Education Committee



Education committee of the New England Purchasing Agents Association: left to right, front row, Louis A. Little, Simonds Saw & Steel Company, Fitchburg, Mass.; Herbert A. Hamilton, Jr., General Electric Company, West Lynn, Mass.; standing, left to right, Eliot P. Emerson, secretary, New England Purchasing Agents Association; Robert B. Denis, Photon Inc., Cambridge, Mass.; Harold Bloom, Avco Manufacturing Company, Everett, Mass.; and Philip Steinberg, Keystone Manufacturing Company, Boston, Mass. Missing David W. Sampson, McGill Commodity Service, Auburndale, Mass.

Louis A. Little, Simonds Saw & Steel Company, Fitchburg, Mass. is serving for the second year as chairman of education for the New England Purchasing Agents Association. He has picked an active committee to work with him and several advance meetings of the committee have resulted in a live program for the 1958-59 season.

Dr. Howard T. Lewis, professor emeritus of Harvard Graduate School of Business Administration, is presenting an advanced course of study for a limited number of members under the theme: Problems of Purchasing Management. For men newer to the profession, a course is now being worked out in cooperation with one of the local universities.

The members of the New England Purchasing Agents Association education committee have been in a huddle with faculty representatives to arrange a basic course for association members who would like to start "at the beginning" academically, but who have already experienced a few years of actual practice in industry and wish to study together.

Abbott P. Smith, New England

district manager of Silas Dean, Inc. spoke at the opening session on October 6. He discussed techniques of selling. It provided P. A.'s with a little "counter intelligence" on the sales-purchasing game and at the same time showed them how to be more effective in selling themselves and their departments in their daily company contacts with other departments and with management.

New England P.A.'s Get Scrap Dope

To open the 1958-59 season, the program committee of the New England Purchasing Agents Association, of which William C. Kendrick is chairman, presented a man and a subject of universal interest to purchasing agents. James A. Vaughan, president of New England Management Corporation, spoke on "How to Get the Most for Your Scrap."

A former college professor, he is an expert on the marketing of waste materials of all kinds—metals, paper, textiles, rubber, wood, etc. Mr. Vaughan served as a consultant to purchasing agents for many years, advising them on how, when and where to sell their scrap for the top dollar. His advice is particularly needed today when all companies are scraping the barrel for profitable ideas. And there is profit in scrap.

The education committee, under the continued leadership of Louis A. Little, believes that to be an able buyer one should understand the techniques of successful selling. Since all of us would like to know more about how to sell our ideas to fellow-workers and management, the afternoon program, at the Hotel Vendome, had wide appeal.

The speaker was Abbott P. Smith, New England district manager, Silas Dean Organization, Inc. A former training director and supervisor of sales personnel for International Harvester Co., Mr. Smith has been a successful salesman for a quarter of a century. The author of the best selling "How to Sell Intangibles" he is respected in sales circles everywhere as one who knows whereof he speaks.

Mac-it is on the move to give you . . .

MORE REASONS TO SPECIFY MAC-IT SCREWS

Here's important news for users of alloy steel fasteners.

Mac-it is moving ahead on an aggressive program designed to provide better customer service through:

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- PRODUCT IMPROVEMENTS
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SURVEY REPORTS SKIN DISEASE IS INDUSTRY'S NO. 1 HYGIENE PROBLEM

Here's What To Do About It In Your Plant

Recently, 2,177 major plants were surveyed by a market analyst to discover their No. 1 skin hygiene problem. The overwhelming majority of replies said: SKIN DISEASE.

The reasons for this answer:

-skin disease means costly medical treatment

skin disease means prolonged absenteeism

-skin disease means worker dissatisfaction and compensation claims

What can you do in your plant to fight this problem? Call in an SBS skin cleanser representative. Most skin disease troubles can be traced to improper cleaning or use of the wrong cleaners. Your SBS representative is the man most completely equipped to study the situation and offer measures to improve it. He'll check all the conditions in your plant and recommend . . . not just a soap, but a planned corrective skin hygiene program for safe skin cleansing. Because Sugar Beet Products produces a complete range of cleansers, the SBS man can recommend the exact ones for your needs. Many famous firms are protected by SBS skin cleanser programs. Why not write us today? Dept. 58-K5.

the washword of industry



SAGINAW, MICH. . Los Angeles, Calif. . Newark, N. J. CANADA: Chemical By-Products, Ltd., Toronto, Ontario For More Information Write No. 262 on Inquiry Card-Page



Association News

Deaver Forecasts '59 to New Jersey P.A.'s

John V. Deaver, senior foreign economist of the Chase Manhattan Bank, was guest speaker at the Purchasing Agents Association of North Jersey meeting which was held at the Essex House, Newark, N. J. Mr. Deaver predicted that U.S. imports would increase through 1959. This he feels will materially help business in the U.S. Over one hundred purchasing executives were in attendance.

Theodore Kopacki, purchasing agent of Autographic Business Forms, Inc., of South Hackensack, N. J. was moderator of the forum which preceded the dinner meeting. The topic was "Price and Cost Determination." Panel members were Luke B. Margraff and Dale C. Weisenstein, both purchasing executives of the Westinghouse Electric Corporation.

Tri-City Ass'n Hears "Postman Thrice"

The Tri-City Association of Purchasing Agents met recently in the Skyline Room, Blackhawk Hotel, Davenport, Iowa. The speaker that evening was Mr. Newell C. Day, general agent of the Equitable Life of Iowa, located in Davenport. The subject of his talk was "The Postman Rings Thrice," and has to do with the significance of letters in ancient history through the type used in industry today.

The association has notified the Junior Achievement of both Rock Island and Scott County that they wish to establish a Savings Bond Award on a monthly basis for the outstanding Purchasing Agent of the Junior Achievement companies. It is felt that this is an excellent means of promoting the thinking of these young people toward the purchasing profession and its importance in the indus-

trial world today.

ARABOL SPECIFICATION ADHESIVES



May your Christmas have the protection of fire safety!

The decorations of the Christmas Season are delicate creations, like the flocking of artificial snow on trees and store displays. What a comfort and blessing if the flocking adhesive is fire-resistant! Fire-protection can be specified in Arabol Adhesives.

Non-flammability is also a desirable quality in many other fields. Is it a factor in your operations?

ARABOL Adhesives are specification-formulated for dozens of other requirements—in the making, packaging, labeling and shipping of the products of industry. Specification adhesives—to meet each of your requirements—cost little more (and sometimes less) than run-of-mill adhesives.

We invite the opportunity to submit formulated samples—for tests to be made in your own plant—under your own particular working conditions. That is the one kind of testing that assures you of satisfactory results.

Our fourteen plants and warehouses—plus four laboratories—are your assurance of service and delivery. It is our privilege to serve the leaders, as well as hundreds of small users. May we send you a helpful booklet listing 23 basic specifications for adhesives? Kindly address your inquiry to Department 24.



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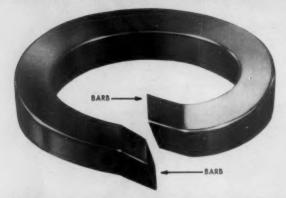
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the ORIGINAL

POSITIVE LOCK WASHERS



AT NO EXTRA COST!



This Is The Machine That Makes It Possible



Be SURE with NON-LINK
POSITIVE Lock Washers —
the "barbs" make
the difference

This illustration shows how NON-LINK POSITIVE Lock Washers combine the advantages of tooth-type washers with the proven spring-power of regular lock washers. Arrows point to the feeth or "bords" in both the mut and the bearing surface. At the same time, the spring-power maintains the tansion which assures a permanently light assembly.

Automation Eliminates Costly Operations

A new, high-speed fully automated process (Patent Pending), developed by POSITIVE produces these superior lock washers at low cost because it eliminates slow, costly manual operations formerly required. As a result, you can now buy NON-LINK POSITIVE Lock Washers in 9 Popular Sizes (A.S.A. Medium) at the same price you are paying for conventional spring lock washers.

9 Popular Bolt and Screw Sizes (A.S.A. Medium) 3/16", 1/4", 5/16", 3/8", 7/16",

1/2", 9/16", 5/8", 3/4"

Test their superior holding power and be convinced that they combine all the advantages of tooth-type washers with those of live action spring lock washers. NON-LINK POSITIVE Lock Washers have long been known as the sure way to keep bolts and nuts tight—and remember, now you can buy them at the same price as regular lock washers.

Send for FREE Trial Order

If you will write us on your company letterhead, we'll gladly send you FREE a small quantity of NON-LINK POSITIVE Lock Washers in any or all of the 9 popular sizes listed above (A.S.A. Medium Section).

POSITIVE LOCK WASHER CO.

183 Miller St. . Newark 5, N. J.

Manufacturers of High Grade Lock Washers Since 1890
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Association News

Central Iowa Association Captures Boss's Attention



Left to right: Jerry Talbot, Globe Hoist Co., Des Moines; Herb Lubke, Solar Aircraft Co., Des Moines; Matt Karpen, Waterloo Valve Spring Compressor Co., Waterloo; Kenneth Block, A. T. Kearney Co., Chicago; Jim Stone, Solar Aircraft Co., Des Moines; Al Remp, Dunlap Manufacturing Co., Des Moines.

Value analysis, junior achievement, and a management consultant who told about the boss's attitude toward purchasing made a very interesting Boss's Night at the Central Iowa Association's regular September meeting.

Forty members and twenty guests heard Kenneth Block, of the A. T. Kearney Co., Chicago management consultants, tell how "The Boss Looks At Purchasing".

On the "Know Your Members Better" phase of the program, E. C. MacDonald, of John Deere's Ottumwa Works, gave a very fine five-minute presentation on value analysis. Larry Milstead, executive director of Junior Achievement in Des Moines, gave a five-minute talk on the J-A program.

Also featured was a five-minute talk by Pete Manno of the Tension Envelope Co., and the election to membership of Carroll Matthews of the Owens Brush Co., Iowa City, Iowa. The presentation of ten new membership applications indicates the rapid growth of the Central Iowa Association.

Announcements included the Product Show and District 3 Council meeting to be held in Des Moines during October.

FOR MORE INFORMATION USE INQUIRY CARD PAGE 32

For More Information Write No. 265 on Inquiry Card—Page 32→ Purchasing



Photo courtesy of American Bridge Division, United States Steel Corporation

Handles bulky loads . . . outhauls 5 trucks!

The Clark-Ross Carrier pictured above hauls girders from a storage yard one mile away to this construction site. Working with another Carrier an average of 48 net tons are moved each hour. On these short runs, each Carrier is capable of outhauling 5 flat-bed trailer rigs. Reason is: the Carrier is self-loading and self-unloading.

How about a Clark Carrier for your work? One man and his Carrier can load up to 25 tons of material . . . can be on the road in the time it takes a regular truck to jockey into position. The Carrier can travel at truck speeds . . . self-unload. And it can handle all types of cumbersome materials.

Reports from users point up the fact that once a Carrier is used in their operation, they find that no other kind of materials handling equipment can do the job as economically. Let us send you some re-

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They are made to provide smooth, more efficient transmission of power and are available from stock in 13 sizes with bored or solid hubs ranging from .375" to 4.000". Special bores, bores with keyways or setscrews are available upon special order.

The close limits to which all parts are held assure maximum load carrying capacity with durability and long life. Joints with hub diameters of .750" and larger have a self-closing snap ball oiler while the small pin is held in place with a self-locking snap ring. The snap ring simplifies assembly and disassembly.

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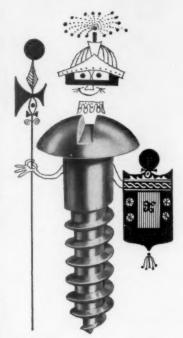
Association News

Georgia Ass'n Greets Out-of-State Guests

Twenty-eight out-of-state purchasing agents, including a number of V.I.P.'s in District and National Association work were on hand for the Georgia Association of Purchasing Agents' dinner-meeting together with fifty-five local Association members and their local guests. All were amply rewarded in hearing a down-toearth "meaty" talk on the Rela-tion between Value Analysis and Standardization by guest speaker, Harlan E. Cross, purchasing agent of the U.S. Pipe and Foundry Company of Birmingham. Alabama and national chairman of the NAPA value analysis-standardization committee.

Noted for his tireless activity in national, district and local Purchasing Agent Association work, Mr. Cross in his talk pointed up the continuing lack of understanding among purchasing agents of the twin purchasing tools-value analysis and standardization-and how to use them. As indicated by Mr. Cross, to many, these tools are "hazy words with little actual meaning" and consequently are labelled as impractical, especially for small firms with limited purchasing personnel. Actually, Mr. Cross stated, most purchasing men have been using to a limited degree the cost reducing techniques value analysis and standardization in their procurement procedures without realizing it. "All that is now needed", according to Mr. Cross, "is a further understanding of how more concentrated efforts by their purchasing departments on just two steps would lead to a much more intelligent type of buying with resultant cost savings. These two steps are (1) the actual analysis of material and equipment functions and values, and (2) the agreement upon and setting up of clear purchasing standards.

Preceding Mr. Cross' talk was a short business meeting of the Georgia Association under the direction of President James T. Mc-Donald. New member, Wilson



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For More Information Write No. 267 on Inquiry Card—Page 32 PURCHASING Reeves of Foote & Davies, Inc., Atlanta, was presented to the group. Plant visitation chairman of the local association, Clifford F. Servais, announced plant visitation arrangements to Delta Airlines in October and Celanese Corp. of America in Rome, Georgia in March. A special welcome to all visitors and introduction of V.I.P.'s in national and district NAPA work was made by James E. Clark, Georgia Association member and national vice-president of NAPA.

Little Rock Gets Advertising Talk

The Little Rock Association of Purchasing Agents held their monthly meeting at the Marion Hotel. After a 30-minute "fellowship hour," President Ken Chambers got the ball rolling and asked for a report on the District Seven Workship held in Atlanta. Lamar Miller reported on standardization and value analysis; Gerald Glover reported on education; and Hugh McMillan on public relations.

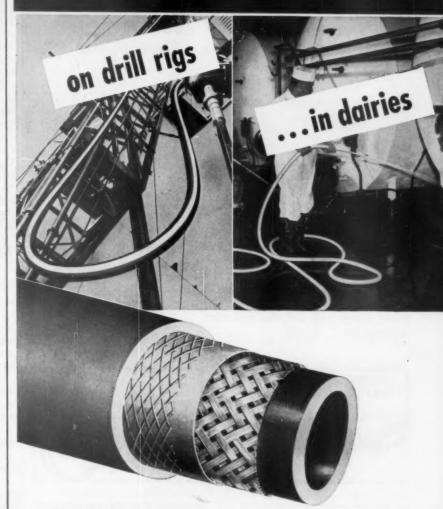
The program was then turned over to Ed Tinnell. He introduced the speaker for the evening, Al Pollard, who is with the Brooks Pollard Advertising Company. Mr. Pollard gave a very constructive talk on the "Art of Advertising." He impressed on the group the importance of being public relations minded. The group enjoyed his talk and followed it with several questions.

Rhode Island Ass'n Holds Opening Meeting

Ed Winslow arranged an interesting program for the opening meeting of Rhode Island Purchasing Agents Association. Ed Ulrich, representative of the Winchester Fire Arms Division of Olin Mathies a Chemical Corp., presented a sound film in color entitled "White Tail Buck." He also discussed in detail a number of fire arms which were on display. George W. Kelsey, vice-president of B-I-F Industries, spoke on the subject of the "United Fund Story."

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Cut costs with
Thermoid Conveyor Belting...



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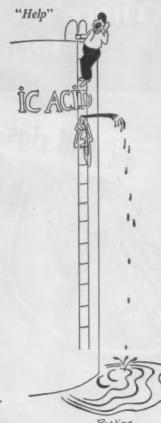
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Association News

Jackie Robinson Addresses New York Meeting

Jack R. "Jackie" Robinson, vice president, personnel, Chock Full O'Nuts, spoke at a recent meeting of the Purchasing Agents Association of New York on the subject "Team Work in Business." His talk was well received.

Preceding the dinner meeting was a general forum on "World Markets and Their Effect on Your Decision of Tomorrow." Among the guest speakers were Consul Colin C. Hoffmann, Consulate General's Office, German Federal Republic; and Harry S. Radcliffe, National Council of American Imports, Inc., along with Robert Reichard, "Purchasing Week."

Atomic Energy and North Jersey P.A.'s

Tom B. Lanahan was the guest speaker at a meeting of the Purchasing Agents Association of North Jersey held at the Essex House, Newark, N.J. His topic was "Atomic Energy in War and Peace."

Since leaving West Virginia University for the U. S. Navy during World War II, Mr. Lanahan has been engaged in research work for Princeton University. He has been a faculty member of the University of Chicago, and of the University of California, assigned to Los Alamos, New Mexico.

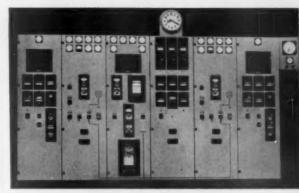
Bosses' Night at Central Iowa Ass'n

The Purchasing Agents Association of Central Iowa held its first meeting of the fall season in Des Moines. Preceding the meeting was a plant tour of the Frye Manufacturing Co., Des Moines, maker of carbon paper. This was followed by a social hour at the Hotel Kirkwood. After dinner, Kenneth L. Block of the A. T. Kearney Co., Chicago, Ill. spoke on "The Boss Looks At Purchasing." Mr. Block gave an entertaining and factual talk.

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Indoor metal-clad power plant switchgear rated 4160 volts, 3 phase, 60 cycles supplied to a partially attended generating station.

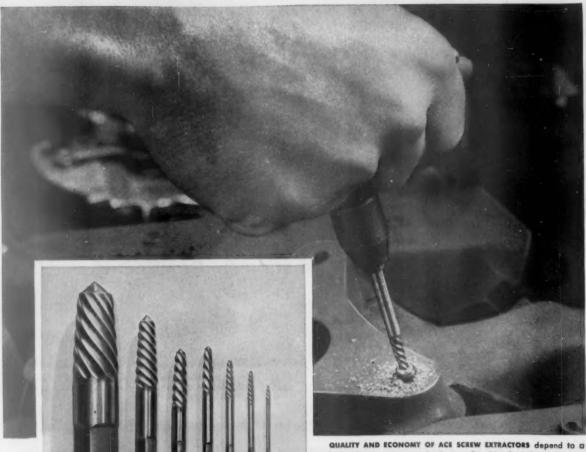
It started with a directive—"Make it the best!" A creative team set out to implement this decision. Engineers, designers, production men, and marketing personnel—all took up the challenge. What was then good gave direction. They added their talents, their skill, their experience—up-to-date application requirements—designing, testing, redesigning until drawing board plans were translated to market place reality. Out came metal-clad switchgear preeminent in strength, simplicity, and performance. They had made it the best!



Type DST air circuit breaker-5 kv, 250 mva, From simple feeder circuits to complex generating station protection—when you specify Federal Pacific metal-clad switchgear, you specify reliability. Proof is yours for the asking. Write Federal Pacific Electric Company, Newark, New Jersey for Catalog 3-440—sixty-four pages of the latest in metal-clad switchgear information.



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QUALITY AND ECONOMY OF ACE SCREW EXTRACTORS depend to a large degree on material selection. Republic Cold Drawn Leaded Alloy Steels help meet these product requirements by providing high hardenability and toughness, plus good formability.

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Use of Republic Cold Drawn Leaded Alloy Steel for Acc Screw Extractors helps the Henry L. Hanson Company, Worcester, Massachusetts, secure an ideal combination of production and performance advantages.

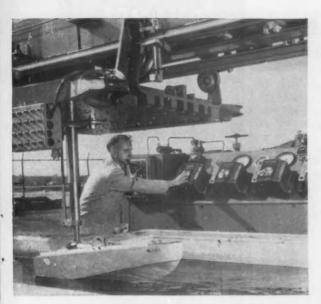
First, rolling of the extractor spirals used to require several passes, each followed by an annealing operation. Now, with Republic Leaded Alloy, separate passes can be made deeper. Result is a substantial reduction in the total number of steps. Moreover, since cold drawing improves the machinability of any given analysis, savings in machining costs are secured.

Next, in-service demands on Acc Screw Extractors require a high degree of hardness and toughness.

The two Republic Alloys used (4140 and 4150) provide these properties with margins to spare. With scientific heat treatment, the finished extractors are practically unbreakable.

Republic Cold Finished Alloy Steels are available in every standard analysis, plus many specials, to give you the best combination of chemical and mechanical properties to suit virtually any application. Republic Metallurgists will be glad to work with you in developing still other types as required.

It will pay you to get complete information on all of the advantages offered by Republic Cold Finished Alloy Steels. Simply contact your nearest Republic office or mail coupon.

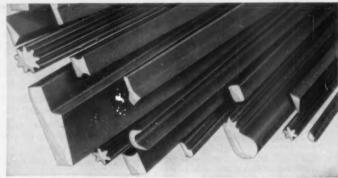


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INCREASED PRODUCTION, LOWER COSTS, IMPROVED QUALITY can be gained in parts produced from Republic Cold Drawn Special Sections. Because they are formed to the predominating cross-section of the part, special sections eliminate or greatly reduce required machining. Results are faster output and lower cost. Also, since cold drawing improves the physical properties of any given analysis, completed parts are stronger and longer wearing. Other advantages may include improved appearance and simplified design. For further information, mail coupon.

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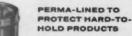
Call Continental when you need steel containers. Get top quality plus outstanding Continental service. Engineering and research assistance available to help you solve any packaging problem.







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Association News

British Columbia Activities

The first general meeting of the 58-59 season was held at the Hotel Vancouver. Guest speaker was Mr. Gilbert Garnett, president of Coast Paper Co. Ltd. and member of the Vancouver Board of Trade. The Brussels World Fair was the subject of a very interesting talk entitled "Brussels-The Show Window of the World." Mr. Garnett was very impressed by the United States and Russian buildings. He thought the United States exhibit conveyed the impression of beauty, while the whole Russian effort was to show their strength. The outstanding exhibit in Mr. Garnett's opinion was the Netherlands'. The exact location of all Dutch Ships all over the world was shown on a huge world map. A replica of the Dykes of Holland was shown in a huge tank of water. The various types of accommodation available on Dutch ships were on exhibit,

Mr. J. G. McIntyre, chairman of the educational committee announced a new plan of education for the coming year, "Package Programming." The implementation of this idea involves the coordination of the programs of all committees around the monthly point of emphasis. All phases of purchasing are to be covered during the next year.

The meeting concluded with the presentation of a set of cuff links to immediate Past President Art Nursey for his very fine work dur-

ing the past year. Hooker Chemicals Ltd., North

Vancouver was the scene of a later plant visit held by the association. This is the only plant of its kind in British Columbia. producing chlorine and caustic soda serving the pulp, paper and oil industries. Members toured the deep sea wharfage and freight car barge ship and the large storage yards. The company has over 100 tank cars in service. They are large users of mexican salt and operate one of the most modern plants of its kind in North America. Following this very interesting tour, refreshments were served.



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Once you have established the basis weight of kraft that best does your job—insist that you get it. Every pound of excess weight is many yards less wrapping footage for your purchasing dollar.

Crossett Leatherneck wrapping is carefully weight controlled to give you full value. The weight you order is the weight you get—and you get it when you need it.

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Wisconsin Paper & Products Co. MINNEAPOLIS, MINN. John Lestie Paper Co. Minnesota Paper & Cordage Co. Minnesota Paper & Cordage Co. MUNCIE, IND. MUNCIE, IND. MUNCIE, IND. MUNCIE, IND. Schwartz Paper Co. NASHVILLE, TENN. Clements Paper Co. NATCHEZ, MISS. Bancroft Paper Co. NEENAM, WISC. Sawyer Paper Co. NEW ORLEANS, LA. Stevens-Band Paper Co. OKLAHOMA CITY, OKLA. Carpenter Paper Co. OKIAHOMA Paper Co. OKIAHOMA PAPER CO. OMAHA. NEB.
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PITTSBURGH, PA. Balter Paper Co. Chatfield & Woods Co. of Penna. Interstate Cordage & Paper Co. RACINE, WISC. W. N. Kranz Co.
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Shaughnessy-Kniep-Hawe Paper Co. ST. PAUL, MINN. Anchor Paper Co. TEXARKANA, TEX. Louisiana Paper Co. TOLEDO, OHIO Central Ohio Paper Co. TULSA, OKLA. Tulsa Paper Co. TYLER, TEX. Etex Paper Co. WACO, TEX. Lind Paper Co. WACO, TEX. Watham Bag & Paper Co. WASHINGTON, D. C. R. P. Andrews Paper Co. WICHITA, KANSAS Southwest Paper Co. WICHITA FALL, TEX. Empire Paper Co.



43 stock sizes for shafts from 1/8 to 3 in. diameter

Standardized HALLOWELL solid steel collars are precision machined from first quality bar stock, have perfect balance, fine finish. Bore size stamped on face of each collar for quick size identification. Your choice of socket set screws: UNBRAKO self-locking knurled cup point or, where locking action is required with a plain cup or flat point or against extra hard shafts, UNBRAKO socket set screws with the Nylok* self-locking feature. See your HALLOWELL distributor or write for new Bulletin 868. Hallowell Collar Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

*T.M. Reg. U.S. Pat. Off., The Nylok Corporation



Jenkintown · Pennsylvania

undard Pressed Steel Co. • The Cleveland Cap Screw Co. • lumbla Steel Equipment Co. • National Machine Products Co. Nutt-Shel Co. • SPS Western • Standco Canada (td. • Unbroko Socket Screw Co., ttd.

For More Information Write No. 276 on Inquiry Card-Page 32



. Top quality of materials has always been a distinguishing feature of PAGE Chain Link FENCE. This well-known value plus PAGE standards of workmanship in fence erecting by members of the Page Fence Association have given continuing assurance of reliable protection and good appearance. Now another forward step adds to value certainty. Each newly erected fence will be identified by a PAGE "REGISTERED' metal plate and a dated, numbered and signed Registration Certificate

tration of your new Page Fence and certification of its quality are assurance of long, dependable service and lasting satisfaction.

PAGE will help you to choose the RIGHT fence for you from a wide variety of fence styles and four superior fabric materials-including the new acco Aluminized Fabric. For information and name of nearest Association member, write for Folder DH-26.

Address: PAGE FENCE ASSOCIATION National Headquarters . Monessen, Pa.

A PRODUCT OF PAGE STEEL & WIRE DIVISION, AMERICAN CHAIN & CABLE COMPANY, INC.

For More Information Write No. 277 on Inquiry Card-Page 32

Suppliers

Anti-Corrosive Metal Products Co., Inc., Castleton-on-Hudson, N.Y., has appointed John J. Gillis sales representative for New England. Mr. Gillis was formerly sales manager of the Worcester district, American Steel & Wire Co. He has his own company, John J. Gillis Inc., with offices at 447 Statler Office Building, Boston. Mass. He will continue to make his headquarters there.

Walter W. Hutchinson has been named sales manager of Cullman Wheel Company, Chicago, Ill. Mr. Hutchinson was previously



W. W. Hutchinson

associated with Sheller Manufacturing Corp. and Dayton Rubber Co. He will make his headquarters at 1344 West Altgeld St., Chi-

The Wickwire Spencer Steel Division of The Colorado Fuel and Iron Corporation has moved its New Orleans district sales office to 1128 Dublin at Oak Street, New Orleans 18, La.



"Look, I've been calling on you for over a year now. When are you go-ing to stop calling me 'stranger'?"

Why you get better performance at

lower cost with parts from POLYPENCO®



Stock Shapes—for rapid, low-cost fabrication POLYPENCO Nylon and NYLATRON® GS POLYPENCO Teflont POLYPENCO Q-200.5 (cross-linked styrene) POLYPENCO K-51 Penton *



NYLAFLOW Pressure Tubing and Hose



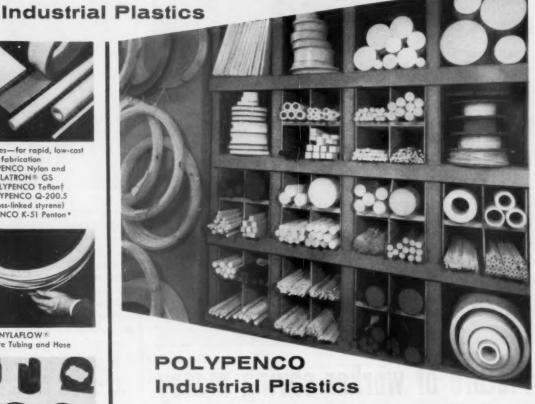
Molded Parts-FLUOROSINT* TFE fluorocarbon resin NYLASINT® cold pressed and sintered parts



CORVEL* **Fusion Bond Finishes**



NYLATRON GS Nylon Molding Powders



- · When service life and performance of your products depend on vital components, it will pay you to specify POLYPENCO Industrial Plastics. No other plastic materials available today offer their consistent high quality with uniform physical, chemical and electrical properties.
- POLYPENCO Nylon, Teflon and other industrial plastics are now available in the widest range of shapes and sizes obtainable anywhere. This means that you can select the stock shape that most nearly approaches your finished part.
- · Nationwide warehousing gives you immediate delivery; and latest technical data and engineering assistance are always available to help you obtain the most practical, economical results. Write for the name of your nearest supplier.

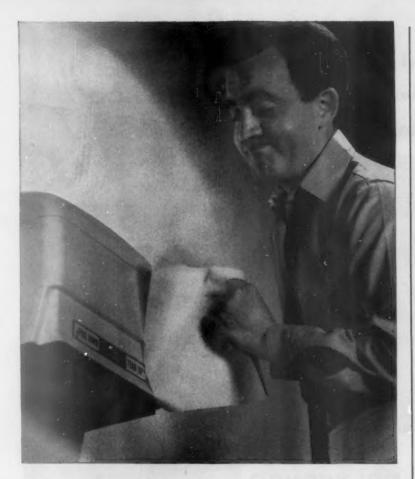
The Polymer Corporation of Penna. National Polymer Products, Inc. Polymer Processes, Inc. **Halex Corporation**

subsidiaries of THE POLYMER CORPORATION, Reading, Pennsylvania

Export: Polypenco, Inc., Reading, Pa., U.S.A.

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Picture of worker saving money

He's helping cut waste 20% with Steiner roll towels

Paper towel expenses getting high? You can cut towel waste with a Steiner controlled roll paper towel dispenser. Here's how: User pulls from the cabinet only the amount of toweling he needs . . . no grabbing of a handful of towels that aren't needed, half used and then discarded. Still, user gets plenty of towels for thorough drying job. You can save 20% or more in towel costs with Steiner controlled dispensers.

Install them on a trial basis and see how you save. For more information contact your janitorial supplier or sanitary paper distributor or write Steiner Company, 740 Rush Street, Chicago 11, Illinois.



STEINER COMPANY

740 RUSH STREET, CHICAGO 11, ILL., DEPT. 11C-

Please send me free bulletins on Steiner controlled roll paper towel dispensers.

COMPANY____

STREET____

ZONE STATE

For More Information Write No. 279 on Inquiry Card-Page 32

Suppliers

Girdler Process Equipment Division of Chemetron Corporation has announced the opening of a new sales office for Thermex



Frank Vance

high-frequency dielectric heating equipment at 855 Board of Trade Building, Chicago, Ill. Frank Vance will be director of sales and engineering services from the Chicago office, which serves northern Illinois, Michigan, Minnesota, Wisconsin, Iowa and part of Indiana.

Fred T. Wilson, Jr., assistant manager-sales of Air Reduction's sales office at New Orleans, La., has been appointed manager at



F. T. Wilson, Jr.

that location. With Air Reduction since 1947, Mr. Wilson served in various sales capacities for the company at Louisville, Ky., and Nashville, Tenn.

E. C. Kennedy, salesman, New Orleans, succeeds Mr. Wilson as assistant manager-sales.



Where to get Aluminum PLUS:

from your Reynolds Distributor

When you're buying aluminum, you often want *more* than metal. Quality is vital, of course. So is *service*—delivery, technical assistance, and often fabrication.

That's why it pays to purchase your aluminum from a Reynolds Aluminum Distributor. His stocks are your warehouse for a complete range of aluminum products. His delivery is fast and dependable. His salesmen can give you expert help in selecting the right temper, alloy and shape for your job. And often his fabricating facilities can save you important production money.

Get all the services you need when you buy aluminum. Call your Reynolds Distributor.

Reynolds Metals Company Richmond, Virginia





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HALF CENTURY
OF EXPERIENCE



Sizes up to 9/16"...

... down to almost the size of a human hair, in low carbon and medium low carbon steels.

Wire of many finishes

the right wire for the job-coppered, tinned, bright, galvanized and other finishes to fit your production needs.

Better forming and workability

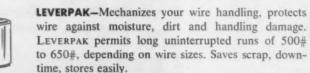
Continental Wire is available in almost any temper and analysis in low and medium low carbon steels for your particular forming jobs.

Metallurgical service

Thousands of case histories provide unsurpassed resources for developing a practical solution to your wire problems.



ECONO-COIL—Reduces scrap loss up to 90 percent. Saves material handling time. The Econo-Coil gives you continuous length wire coils of 2000# to 3000# catchweight, in sizes from 12 gage through ½" diameter. Shipped on returnable Econo-Coil pallets.





SPECIAL SHAPES—D-shaped, V-shaped, oval, half-oval, half-round, square, rectangular, triangular, keystone-shaped and others. Saves fabricating and machining costs.

Chances are you have a problem right now that we can help you solve—with Wire. Call us.

CONTINENTAL

STEEL CORPORATION . KOKOMO, INDIANA

Wire Specialists for over Half a Century PRODUCERS OF Manufacturer's Wire in many sizes, tempers, and finishes, including Galvanized, KOKOTE, Flamesealed, Coppered, Tinned, Annealed, Liquor Finished, Bright, and special shaped wire. Also Welded Wire Reinforcing Fabric, Nails, Continental Chain Link Fence, and other products.

For More Information Write No. 281 on Inquiry Card-Page 32

Suppliers

John Stuart Smart, Jr., has been appointed general sales manager of American Smelting and Refining Co., New York, N. Y. Ralph L. Wilcox has been named assistant sales manager.



J. S. Smart, Jr.

Mr. Smart, joined Asarco in 1936 as a metallurgist at the company's central research laboratories. He rose to the position of assistant director of research from which post he assumed his present assignment.

Mr. Wilcox has been with Asarco since 1952, and has had wide experience in the non-ferrous metals field.

Colson Corporation, Chicago, Ill., has announced the appointment of D. F. Adams as vice president in charge of sales. Mr.



D. F. Adams

Adams has been general sales manager of the company since 1957. Before that he was sales manager.

The announcement of two promotions in the sales organization of Acme Steel Company, Chicago, Ill., has been made. A. E. Russert was appointed sales manager, Strip Steel Sales Division and J. R. Sansom was appointed sales manager, Fabricated Materials Division.



A. E. Russert

Mr. Russert joined Acme Steel Company in 1953 as Wisc. district sales representative. He was appointed assistant manager, Strip Steel Sales Division in 1956. Prior to joining Acme Steel, he was Indiana district sales manager for Sharon Steel Corporation, Sharon, Pa.



J. R. Sansom

Mr. Sansom joined Acme Steel in 1956 as manager of distributor sales for Acme Steel slotted angle products. He was appointed assistant manager of the slotted angle sales division in 1957. Prior to joining Acme Steel, he was distributor salesman for the Carboloy Department of General Electric Company in Grand Rapids, Mich,



"YOU GOTTA GIVE ME A CURVE TO GIT ME OVER DAT CYCLONE FENCE!"

Cyclone Fence is the world's most widely used property protection fence. It keeps thieves and vandals outside of industrial plants, prevents trespassing, and confines regular plant traffic to authorized exits and entrances.

Only the finest materials are used in Cyclone Fence to assure a strong, sturdy fence. The Cyclone Chain Link Fabric is galvanized after weaving for maximum resistance to rust and corrosion.

For more information on Cyclone Fence, send for our free booklet. In it are many examples of other industrial plants and other properties protected with Cyclone Fence.

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Cyclone Fence, American Steel & Wire Dept. Z118, Reckefeller Bidg., Cleveland 13, Ohio Send free booklet, "Your Fence."

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Cyclone Fence Dept.

American Steel & Wire

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Waukegan, III. . Sales Offices, Coast to Coast . United States Steel Export Company, New York





POSITIVELY
NO SMOKING
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PERMITTED -



In your plant...now...do unmarked hazards threaten employees...equipment...production?

No potential danger is too small to be ignored. STONEHOUSE signs warn of EYE HAZARDS—MACHINE HAZARDS—
FIRE DANGER—RADIATION HAZARDS—
RESTRICTED AREAS—ELECTRICAL AND FALLING HAZARDS plus scores of others. Signs are made of enduring, tested materials, and designed to meet American Standard specifications.

An investment in accident prevention is sure to pay handsome rewards in man hours saved ... equipment preserved ... increased production.

And remember, it costs so little!

Write today for our free, full-color, 64 page catalog of thousands of ready-to-ship safety signs, plus information about custom-printed signs to meet your special needs.

"Signs since 1863"



STONEHOUSE SIGNS, INC., Stonehouse Building, 9th and Larimer, Denver 4, Colorado

For More Information Write No. 283 on Inquiry Card-Page 32

Suppliers

William W. Moore has been elected vice-president for sales and a director of Research-Cottrell, Inc., Bound Brook, N. J.



William W. Moore

Mr. Moore joined the company as an operations and service engineer in 1946. He became an estimator in 1947 and a sales engineer in 1950. He was New York district sales manager from 1953, until his present election.

Donald T. Brockman announced the acquisition of the Wirthlin-Mann Co., mill supplies and power transmission distributors in



B. N. Brockman, Jr.

the Cincinnati area. Mr. Brockman was formerly associated with the G. A. Gray Company as a sales engineer. B. N. Brockman Jr., will be in charge of sales. He had been associated with the C. J. Harter Company, Houston, Texas. Formerly he was advertising and export manager for the R. K. LeBlond Machine Tool Co.



"Conover-Mast Purchasing Directory is used more than any other in our office."—K. A. Waldron, Purchasing Agent, Hyster Company, Peoria, Ill.

finding "WHO MAKES IT" is practically a 30-second operation when you use Conover-Mast Purchasing Directory



You get compactness along with ease of handling and quick-finding when you use Conover-Mast Purchasing Directory.

CMPD is a one-volume specialized industrial buying tool for specialists in industrial procurement.

With this modern 1,500-page, high-speed buying directory near at hand, you'll be amazed how fast you get through your work. Because of its compact size, you can keep it right on your desk.

Remember too, there are no non-industrial product listings to slow you up in getting what you want.

If you do not have a copy of Conover-Mast Purchasing Directory, write to:





gives you all these features for your forged steel pipe union requirements



- Uniform walls for even expansion and contraction under temperature changes.
 They follow the pipe!
- Catawissa Ball-to-Angle Seats give you a "Perfect Seal" regardless of pipe alignment!
- 3. More than adequate wall thicknesses give you Catawissa's 3-to-1 Safety Factor (3000-lb. service, 9000-lb. test; 6000-lb. service, 18000-lb. test)!
- 4. Round, straight barrels for fast wrenching. No uneven or tapered surfaces to cause wrench slips or wrench locking!

Catawissa Perfect Seal Pipe Unions are made by Union Specialisis from 80,000 lb. tensile strength steel (ASTM Spec. A-105-55T, Grade II). Steel forgings from our own forging mill are closely checked for imperfections . . . and finishing on modern, automatic machines with close inspection during and after production give you pipe unions second to none!

Write for Catalog 58 showing the complete Catawissa line of Perfect Seal Products.

for complete, guaranteed satisfaction



CATAWISSA VALVE & FITTINGS CO.

For More Information Write No. 284 on Inquiry Card—Page 32

News

Top Executive Calls On P.A.'s To Increase Profits By Better Buying

Increased efficiency in purchasing, can greatly improve corporate profits in the opinion of William Bynum, president of Carrier Corporation.

Addressing the first annual corporate purchasing managers' meeting recently at Carrier head-quarters in Syracuse, Mr. Bynum said that "materials and services handled by purchasing personnel represent 70 to 80 percent of cost depending on the end product involved."

In calling for cost improvement in buying, Mr. Bynum stressed the importance of good vendor relations—more broadly, good public relations.

"Our purchasing operations are second only to our sales operations in establishing an impression as to the character of Carrier Corporation", he said. "It requires skill and wisdom to do a thoroughly competitive job of purchasing and yet have those from whom we purchase and those from whom we fail to purchase feel they are dealing with a fine organization. In the minds of our suppliers you are Carrier Corporation."

Adolph Ruediger, director of purchases, in charge of the two-day program, reports the sessions were highly successful in charting a course in keeping with the conference theme "Better Buys by Better Buying". He reports the exchange of ideas and techniques will serve to pinpoint purchasing operations on a common corporate objective—increased efficiency.

Other speakers during the meeting included Dr. J. F. Downie Smith, vice president, Research and Development Division; Charles V. Fenn, vice president, Machinery and Systems Division; Leon Hutton, comptroller; Ralph Wilgus, director of traffic; William McGrath, manager of engineering, Unitary Equipment Division; James Greene, Legal Department; and Urban Johnson, supervisor of technical services.

A FREE COST-CUTTING CONSULTANT



Your local Industrial Distributor has gained wide experience in serving many industries and in providing solutions to a variety of production problems. His service begins with an idea—a cost-cutting idea in the form of a product or method which he is willing to suggest at no charge to you.

COST-CUTTING TOOL



He frequently recommends Anderson wire brushes for those jobs requiring production efficiency with top quality results.

For lowest cost per unit processed select: Anderson.

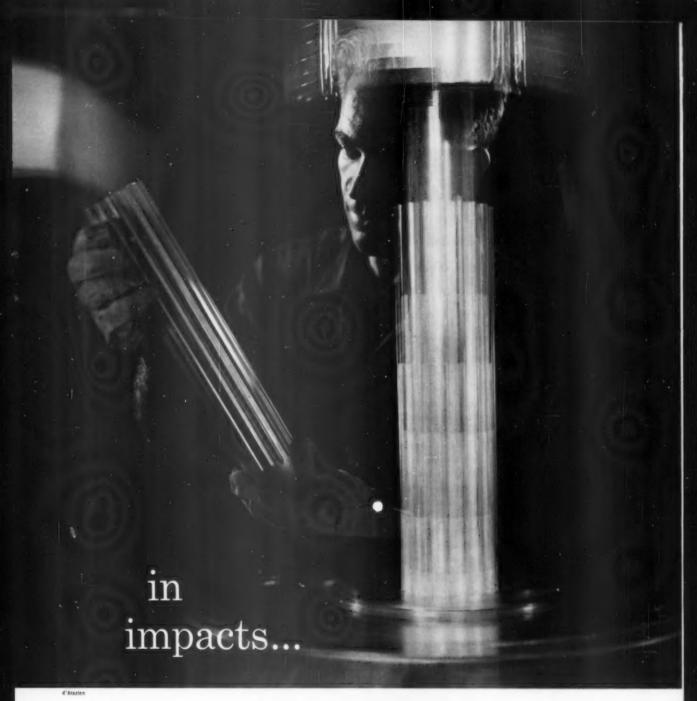
Write for complete catalog of wire brushes with detailed selection and operation data.



ANDERSON CORPORATION 1046 Southbridge Street Worcester 10, Mass.

For More Information Write No. 285 on Inquiry Card—Page 32

PURCHASING



Alcoa puts the metal where you want it

Before you read on, blink your eyes. In the time it took to do that, this man has produced an entire automotive grease gun body—complete with external ribs; solid end; smooth, seamless interior; and go-to-market external finish.

Sound too easy? No! V'e can make round, oval, square and irregular parts the same way. Finished parts—with the strength of forgings—with tolerane's down to plus or minus 0.005"—with a smooth, corrosion-resistant finish of about 125 microinches. A clear case of putting the metal where you want it. The cost of tooling for impacts is

surprisingly low, too. A good rule to remember is that virtually any closed end or tubular design should be considered as an Alcoa® Impact.

In impacts, as well as forgings, castings, extrusions and screw machine parts... Alcoa puts the metal where you want it. A call to Alcoa can mean fewer rejects or ingenious design solutions...less waste in production or a product that sells faster. Start now; write for Alcoa Up-to-Daters, a file of design tips on Alcoa Engineered Products. Aluminum Company of America, 1999 Alcoa Building, Pittsburgh 19, Pennsylvania.



Aicoa puts the metal where you want it — in castings, forgings, extrusions, screw machine parts and impacts.



are you acquainted with

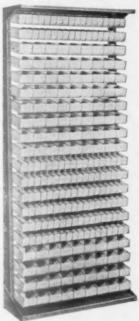
BORROUGHS

Handee Andee

SMALL PARTS BINS



"... if you are not acquainted, get wise to the time, space and money 'Handee Andee' bins can save your company"



Sturdily constructed for long hard use . . . compactly designed for maximum space saving. With their "easy-to-see", "easy-to-reach", "easy-to-arrange" features, it's easy as A B C to keep small parts in apple-pie order all the time. Available in 3 sizes, and designed to hold 4 sizes of bin boxes in any arrangement you wish to make. Bin boxes can be removed or replaced "quick-as-aflash" . . . just slip them on or off. They have large label holders for fast identification, curved bottoms for speedy removal of parts, and their forward tilt provides instant visibility of all contents.

and

cut your steel shelving costs with Borroughs steel shelving!

send for catalogs Most simple — most adjustable — most rapidly assembled steel shelving on the market. Except for the top shelf (2 bolts and 2 nuts), no other bolts or nuts are required for shelves. Just insert Shelf Support Brackets into post slots... no fumbling with studs, bolts, nuts or lock washers... till shelf into Support Brackets, and shelf is ready for loading. You need no special tools for assembly. Each individual unit is complete in itself... no part depends on unit next to lit... any unit or part can be moved independently.

BORROUGHS MANUFACTURING COMPANY

OF KALAMAZOO

A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT

3014 NORTH BURDICK ST. 200 KALAMAZOO, MICHIGAN

For More Information Write No. 287 on Inquiry Card-Page 32

Book Reviews

Developing Executive Skills American Management Assoc.

\$9.00

(AMA members: \$6.00)

Management development-in purchasing as in other managerial activities-is one of the best ways to make use of existing manpower and insure an adequate reserve of key personnel for future expansion. This publication reports on management development practices in a number of leading American companies. Practical approaches to the problem are discussed by representatives of General Electric, International Harvester, Boeing, R. C. A., Food Machinery and Chemical Corp., Goodyear Tire & Rubber, Cities Service, Canadian Marconi, and others.

The book shows how to organize, direct, and evaluate a management development program. Specific development methods are discussed in detail including coaching, job rotation, multiple management, the problem-solving conference and role-playing.

The European Common Market American Management Assoc.

\$6.00

(AMA members: \$4.00)

This is the first publication to analyze the European Common Market from the viewpoint of the American manager. It shows how the Market was conceived and planned and how it will affect American business. Restrictions and obstacles are examined frankly. Plans related to ECM are discussed realistically by representatives of International General Electric, Norton Behr-Manning Overseas Co., Merck, Sharp and Dohme International and Ford Motor Co.

When Are Prices Legally Too Low?

(Continued from page 87)

buyer on notice that his purchase could violate the provisions of the Act.

(4) A buyer is entitled to all of the defenses of the seller. In a particular transaction if the lower price is offered by the seller in a bona fide effort to meet competition, the buyer would not be liable for accepting the price.

(5) As the law is presently interpreted, a proceeding against a buyer for violation of the statute requires the party bringing the action to support a difficult burden of proof. It must not only be shown that the discrimination was not justified by any of the provisions of the statute and that the buyer either knew or should have known that no defenses were available to the seller, but also that the buyer knowingly received the discrimination and that the discrimination resulted in injury to competition.

Cyrus Austin, of the New York Bar, writing for the American Law Institute, in his book Price Discrimination, states: "Since the Automatic Canteen decision the commission has dismissed most, if not all, of its pending 2F complaints. It seems probable that this section, unless amended, will henceforth be little used." It is always well to know where one stands with respect to the law but it appears that the Robinson-Patman Act should not hold too much apprehension for purchasing agents.



"You ought to give me an order just to reward me for my courage."



Chetopa Twills for Industry!

Great on Style—for the men who wear them! Great on Wear—for the companies that buy them! Engineered to fit the specific needs of any job—Lee Chetopa Twill shirts and pants are worn and preferred by men at work...bought and preferred by leading industries. Tailored sizes for perfect fit—20 Tough-Tailored extras stand up under hardest use, countless washings. Lee can tailor-make the answer to your work wear needs in your choice of fabrics and styles. Call or write your nearest Lee Division Office. A trained consultant will contact you promptly.

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For More Information Write No. 288 on Inquiry Card-Page 32

When you buy from U. S. Steel

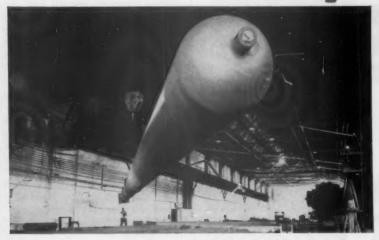


STEEL_PLUS IN ACTION: TECHNICAL ASSISTANCE

The impeller for a centrifugal gas compressor whirls at speeds up to 6,000 rpm., and is subjected to tremendous stress. The Cooper-Bessemer Corporation previously made impellers from a type of steel that was hard to weld. A USS metallurgist suggested "T-1" Constructional Alloy Steel. It has a phenomenal 100,000 psi yield point, and can be welded by ordinary meth-

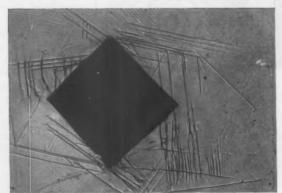
ods, without pre-heating or stress relief. The new "T-1" Steel impellers are easier to fabricate and they can withstand 115% more stress than designed for. Shown here with a "T-1" Steel impeller part are Mr. W. McCracken, right, the Chief Metallurgist of The Cooper-Bessemer Corporation, and J. M. Trutz, USS Service Metallurgist.

you get STEEL_PLUS



STEEL PLUS IN ACTION:

This blimp-like cylinder is headed for an oxygen plant in Illinois. Thirty of these 80-foot giants were made at U. S. Steel's National Tube Division, Christy Park Works, McKeesport. Similar seamless cylinders, with walls up to 3° thick, are able to contain pressure of 10,000 psi. They were practically unheard of until a few years ago when National Tube developed them to meet the demands of new, high-pressure requirements.



STEEL PLUS IN ACTION:

The black square on this photomicrograph is the impression made by a diamond-tipped penetrator when it was pressed into a crystal of age-hardened steel. The lines and ripples were caused when layers of atoms slipped and wrinkled around the penetrator. U. S. Steel researchers study the patterns in such micrographs to learn what happens atomically when steel is bent, flexed or broken. This helps us to develop new and better steels.



STEEL PLUS IN ACTION: MARKETING ASSISTANCE

Automobile manufacturers use Stainless Steel for much of the trim on new models. Because it's Stainless, the trim stays sparkling bright—a point that means a lot to new car buyers. To help promote this feature, U. S. Steel prepared posters showing where Stainless is used on various makes of cars, and sent these valuable sales aids to 60,000 auto dealers.

USS and "T-1" are registered trademarks

American Bridge • American Steel & Wire and Cyclone Fence • Columbia-Geneva Steel • Consolidated Western Steel National Tube • Oil Well Supply • Tennessee Coal & Iron • United States Steel Homes • United States Steel Products United States Steel Supply and Gerrard Steel Strapping • Universal Atlas Cement • United States Steel Export Company



United States Steel

For More Information Write No. 289 on Inquiry Card-Page 32



Built for heavy load conditions, Horsburgh & Scott Herringbone Speed Reducers give you dependable economical service. They're available in single, double and triple reduction units. Check these 9 points of superiority:

- 1. Overall design conforms to AGMA specifications.
- 2. All bearing loads are balanced, due to the symmetrical design of the gearing.
- 3. Oversize bearings and low speed shaft provide tremendous overhung load capacity.
- 4. Heavy wall and base-pad thickness provides extra housing rigidity.
- 5. Housing designed with box-type

construction for maximum thermal capacity.

- 6. Every gear is accurately sized and then cut on a modern Sykes continuous tooth gear generator.
- All pinions are integral with the shafts and are made of heat treated alloy forgings.
- 8. Dust and oil-proof seals are provided on shafts extending outside the housing.
- 9. Splash lubrication floods all bearings and gears.

You'll find a wealth of information in our Catalog 55 describing our complete line of Speed Reducers. Write for it, or ask your nearby H & S representative.

THE HORSBURGH & SCOTT CO.

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Purchasing Is Management

(Continued from page 73)

started meeting, we all had developed a fine relationship" he recalls. "We weren't necessarily sweet and polite to each other, because you can't really take n stand on something that way. But there was no animosity. Just solid understanding that we all had something we wanted as individuals as well as something we wanted as a group. So the barriers were soon broken down. You soon learn you can't be bullheaded about your ideas or you won't get anywhere. We try to sell each other ideas on a 'This is what it can do, this is what it means to us' basis. This give and take cuts off resentments and jealousies, and everybody accomplishes more."

As a member of the New Equipment Group, Price participates in setting up and reviewing the company's five-year plan for mill improvements. The five-year plan is not a rigid program, but more of a flexible forecasting arrangement subject to change as the general business outlook changes. The group meets approximately every two months. It correlates estimated sales, profits and dividends with new maintenance and production requirements.

An important part of the group's work is going directly to the mill and talking personally with supervisors about their needs. The information and ideas obtained from them are analyzed in the light of the company's sales plans. Then the group tries to figure out what improvements or changes will give the company the quickest return or make it more competitive.

Price, who was recently elected president of the New England Purchasing Agents' Association, sympathizes with some of the troubles of purchasing people. But in general he thinks they're pretty much the P.A.'s own fault. "If we spent more time", he says, "making sure we gave our jobs our best efforts instead, of feeling sorry for ourselves, we'd get the management recognition we think we deserve."

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Purchasing Information Yours for the Asking

Some of the outstanding articles that have appeared in PURCHASING Magazine in recent years are still available in reprint form. These reprints are offered to PURCHASING readers at ten cents each to cover the mailing costs. Here is your chance to obtain real help from an authoritative source.

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	COMPETITIVE QUOTES: Is There a Substitute?—A new concept in procurement uses value analysis to supplement, and even replace, competitive quotations. 4 pages.		SIMPLIFY YOUR PURCHASING— 16-page booklet loaded with helpful ideas on small local orders, open end orders, the traveling requisition, controlling requisitions, mechanizing purchasing operations, magnetized inventory control records, forms for a one-man purchasing department.
	VALUE ANALYSIS —		
	16-page booklet gives specific instructions on how to use value analysis techniques, including: How to Analyze Component Parts; How to Analyze Materials; How to Analyze MRO Supplies; How to Analyze Price Increases.		STANDARDIZATION — Five articles designed to help you understand and use standardization for profit: The P.A.'s Stake in Standardization; What's So Special About Specials; How to Make Standards Work for You; The Supplier's Role in Standardization; Should We Standardize Purchasing Forms?
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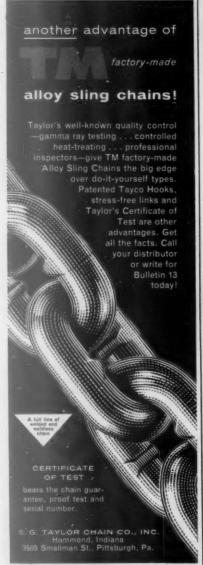
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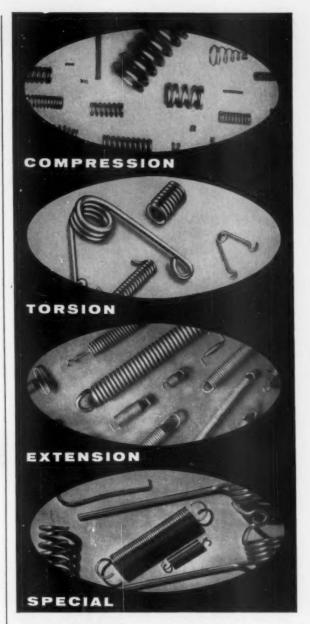
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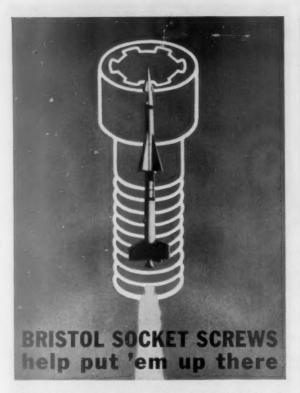
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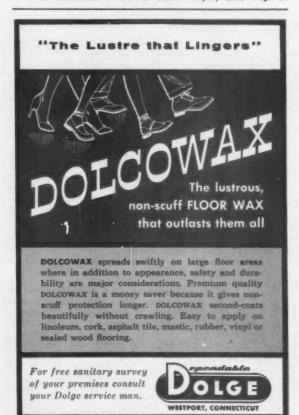
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Experience: Over 14 years materials department supervision and administration in purchasing, traffic, auditing, cost accounting, standardization and pro-cedures. Intimate knowledge of industrial, excavation and automotive equipment and supplies, manufacturers and principal sources of supply. English and Spanish.

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Experience: Two years as warehouse foreman in charge of receiving, storage, shipping & inventory control. Five years as tool room foreman for automotive, electronic, & machine shop operations. One year as office manager in charge of all expediting, ordering, posting & all other clerical functions plus materials co-ordination. Two years as purchasing agent with broad industrial & technical background.

Education: Special schooling in supervision & personnel relations.

Will relocate. Write: Box 239.

Experience: Four years responsible for maintaining the inventory, etc. of a stockroom handling agricultural, plastic, rubber and reagent grade chemicals. Two years in sales training with inventory control experience. Two years as production control coordinator.

Education: One year University. Courses in rubber technology plus courses in industrial purchasing procedure. Currently studying chemistry. Will relocate:

Write: Box 235.

Experience: Fifteen years engineering background, 4 years purchasing experience. General purchasing, raw materials, castings, machine tools, jigs & fixtures, steel in all forms, aluminum, gages, capable of negotiating contracts for outside services. Engineering background permits excellent liaison between engineering department and ven-

Education: 1 year Mechanical Engineering.

Write: Box 245.

Experience: Six and a half years varied and general purchasing experience as an assistant to purchasing agent for a public utility. Established procedures and systems for use of blanket orders. Familiar with expediting, inventory control, claims and adjustments. Seek more challenging position with opportunity to learn and chance for advance-

Education: B. S .- Marketing and Management.

Will relocate in Middle West.

Write: Box 237.

Experience: Twelve years P.A. for 1000employee brass goods company; nine years director of purchases for electric appliance and toy manufacturer with annual purchases of \$10 million; one and a half years director of purchases in complete charge of purchasing, traffic and salvage for manufacturer of air condition equipment and aircraft ac-

Education: College Graduate Educational leader in NAPA and AMA. Will relocate.

Write: Box 262.

Experience: Top executive ability with 10 yrs. extensive purchasing experience in electronics, aircraft, packaging, and home laundry industries. Proven background in all phases of procurement including raw materials, precision tools, gauges, fabricated and extruded parts. Sub-contracted machined details and assemblies for helicopters, missiles, and jet engines. Working knowledge of timer switches, synchronous motors, phenolics, molded plastics, castings and machinery.

Education: Business Admin. Major in

Accounting.

Will relocate. Write: Box 234.

Experience: Value analyst. Five years advisory staff assistance (technical) to purchasing groups in diversified multiplant corporation. Product design & engineering background; also technical sales & field service. Military service included command, staff & research assignments in aviation branch of U.S.

Education: B.S. mechanical engineering; aeronautical engineering; also some chemical & nuclear studies.

Will relocate. Write: Box 250.

> Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence to Employment Service Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, New York.

Experience: Five years as purchasing agent for one of the largest tool and die shops in the Midwest. Buying of all material for both plant and office. Also handled traffic matters. Good background in import-export matters. Education: Import-Export Study. Hold Customs House Brokers License. Will relocate.

Write: Box 238.

Experience: One and one-half years laboratory control chemist. Six and one-half years assistant purchasing agent-Experienced in buying of chemical raw materials, all phases, for pharmaceutical manufacturing company. Cost conscious and experienced in traffic, inventory control functions.

Education: B.S. (Chemistry), M.B.A. Courses in Purchasing Principles. Will relocate.

Write: Box 244.

Experience: Three years experience. Industrial purchasing, expediting, in-viting and analyzing bids, liaison with other departments. Have trained personnel, devised and installed systems and controls. Adept at administration, organization and co-ordination. Education: B. S. in Business Adminis-

tration.

Will relocate. Write: Box 236.

Experience: Four years as purchasing agent for a company manufacturing electronic and electro-mechanical test equipment. Purchasing all types of special and standard electronic components and equipment plus all raw materials, tools and MRO supplies.

Education: 2 years college, electrical engineering, electronics major. Prefer Milwaukee or vicinity.

Write: Box 246.

Experience: Seventeen years of diversified manufacturing experience including: production supervisor-packaging department; materials control coordinator in raw materials control department.

Education: B.S., Major in Chemistry. Will relocate.

Write: Box 248.

Experience: Nine years diversified experience with multi-plant industrial concern covering: determining requirements of all classes of material; inventory control; selection of suppliers; negotiating prices and coordinating purchases at all levels. Directly re-sponsible for purchasing 30% of raw materials and supplies.

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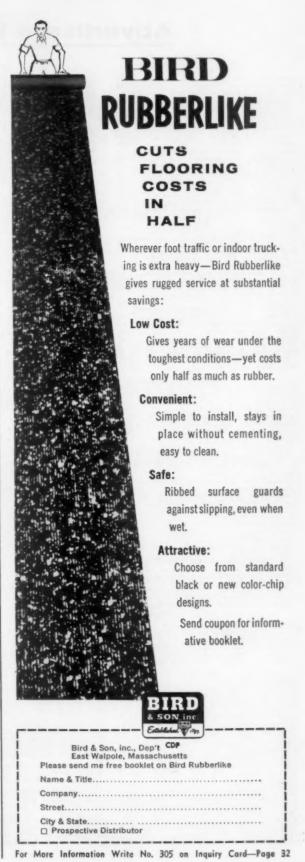
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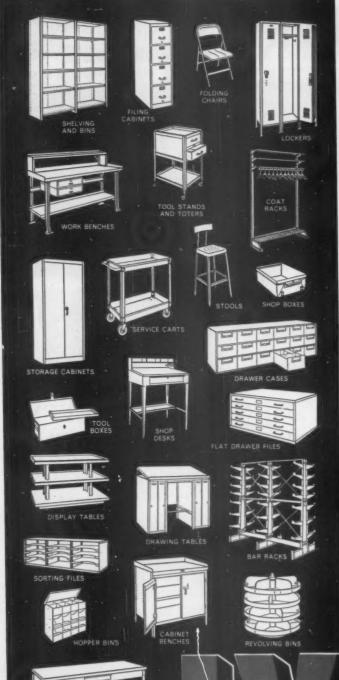
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EQUIPMENT

For More Information Write No. 306 on Inquiry Card-Page 32

materials-handling



NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS



Handles 1.25 million lbs. of paper a day

Philadelphia Bulletin's huge new plant uses an infloor dragline system, carts equipped with Bassick casters, to unload, store, and transport one-ton rolls of newsprint. Lewis-Shepard, a leading materials-handling equipment manufacturer, selected Bassick casters for the carts. Casters have to be built for top performance, low maintenance and long life when an expert in the field chooses them. A point worth remembering next time you need casters.

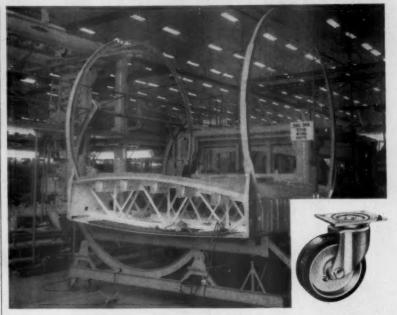


Mother substitute rides casters

Using a caster as the rear landing gear of a decoy, Dr. E. H. Hess, Associate Professor of Psychology at the University of Chicago, studies duck behavior patterns and possible human parallels. The Hess decoys, wired for sound and moving by remote control are used to discover how very early impressions affect duck's later social patterns.

New ideas with casters

Your local distributor who handles Bassick casters can often suggest new ways of moving materials that may save you time or money. He can also recommend the most efficient caster for your specific job and keep you up to date on new caster developments applicable to your operation. Call on him... he'll be glad to work with you and, where advisable, call in a Bassick Field Engineer for consultation.



Casters aid PRODUCIBILITY of Lockheed prop-jet Electra

This short-to-medium-haul aircraft was designed for producibility. It had to be if agreements for performance, price and delivery were to be held firm.

Every production step at Lockheed Aircraft Corporation, Burbank, California, was planned to save time, save materials, save money.

That's why we're especially pleased that so many Bassick casters were used in assembling the Electra... and that they were used in so many ways. Typical is the mid-body wing cell, the Electra's central structural member, shown on Bassick casters above.

Keeping costs down on your production job... or any materials handling job, for that matter... starts with careful planning. And that's the point at which Bassick distributors or Bassick Engineers can help you most. Call on them.



Plant model sectionalized on casters

Sikorsky Aircraft, Division of United Aircraft Corporation has built the scale model of their plant at Stratford, Connecticut, on a sectionalized table. Each section rolls away on Bassick grooved wheel casters to give personnel access to center portions, otherwise hard to get at. With casters operating on inverted angle iron tracks, the sections roll back into exact position. This way you can make a model big enough to work with and yet get inside for close work.



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Only ONE-PIECE Overload Relays give 100% Protection . Only with ONE-PIECE construction can you know you've installed the heater correctly. Only with ONE-PIECE construction can you know the heater is exactly centered, or properly positioned, so that it performs according to its rating. Only with ONE-PIECE construction can you know your motors have full protection.

Only Square D has ONE-PIECE Construction . ONE-PIECE construction eliminates any possibility of heater misalignment. Square D melting alloy thermal overload relays can be installed only one way. They are tamperproof. They are factory-assembled, are individually calibrated and tested. Repeated tripping will not affect accuracy

Insist on Square D melting alloy thermal overload relays

Write for Bulletin SM-275 for the complete story on Square D starters with ONE-PIECE thermal overload relays. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin,

...BE SURE





Heat-responsive element (solder pot) provides accurate response to overload, yet prevents nuisance tripping.

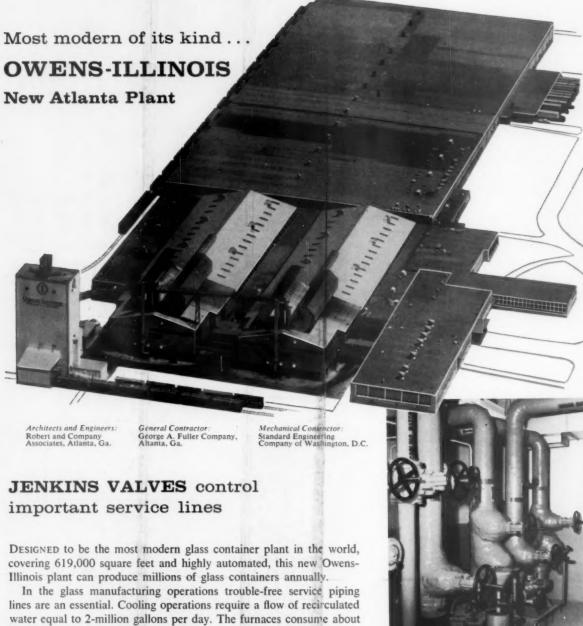
Heat-producing element is an integral part of overload unit. It's permanently joined to solder pot, can't become misaligned.

Individual factory inspection of every Square D melting alloy thermal overload relay means performance you can trust. Each unit is calibrated and thoroughly tested to make sure it will perform according to its rating.

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